



RÉPUBLIQUE ARABE D'ÉGYPTÉ

MINISTÈRE DE LA CULTURE ET INFORMATION

SERVICE DES ANTIQUITÉS DE L'ÉGYPTÉ

ANNALES  
DU SERVICE DES ANTIQUITÉS  
DE L'ÉGYPTÉ

TOME LXII



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1977

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Selim Hassan on his way to discover the tomb of Hnmw-ba. f in 1936.



ANNALES  
DU SERVICE DES ANTIQUITÉS  
DE L'ÉGYPTE

MÉLANGES SELIM HASSAN

I





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## DEDICATION

To the memory of Professor Selim Hassan, the General Organization of Egyptian Antiquities dedicates this number of the *Annales du Service des Antiquités de l'Égypte*.

Selim Hassan is a great name in the field of Egyptology. As a matter of fact, Selim Hassan devoted all his efforts and activities for the progress of Egyptology since his youth time in the twenties until he died in September 1961. He carried out extensive excavations in the Giza Necropolis, as well as he conducted very important excavations at Saqqara. Other than excavations, he made many important studies on: The Religious Hymns of the Middle Kingdom, The sphinx, The Solar Boats, the History of Ancient Egypt, and many other subjects.

He published more than fifty books and articles which greatly enriched the Egyptology Library.

Moreover, many of the brilliant Egyptian scholars were his students, as well as most of the Egyptian excavators were trained under his leadership.

For the honour of Selim Hassan this number is dedicated as a totem for his great efforts in the science of Egyptology.

ZAKY ISKANDER



## FINDS BY SELIM HASSAN IN THE EGYPTIAN MUSEUM (CAIRO).

### II<sup>nd</sup> Section

BY

DIA' M. ABOU-GHAZI

Selim Hassan in his excavation at Giza, which extended to ten seasons<sup>(1)</sup>, published in thirteen volumes, <sup>(2)</sup> has discovered various objects. A great part of it forms an important set among the objects of the Egyptian Museum (II<sup>nd</sup> Section)<sup>(3)</sup>. So little of these objects are royal ones<sup>(4)</sup>. Its greater part is from private tombs<sup>(5)</sup>. Mainly it can be divided into three categories :

- I. Statues. (p. 2—59)
- II. Vases. (p. 60—63)
- III. Miscellaneous objects. (p. 64—76)



## I : Statues

## (A) Royal Statues.

[2]

Ser No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
1	Part of a royal head may be of Kha <sup>c</sup> .f-Re <sup>c</sup>	1937—1938 No. 2081	In the sand south of Kha <sup>c</sup> .f-Re <sup>c</sup> Valley temple.	J.E. 72211	161	U. 32 N. 5 bas unexhibited	Exc. at Giza IX p. 86 (4,a) pl. XLII D	—alabaster —O.K.	—Finely done —Hairdress ; Nemes and uraeus H. 10 cm.
2	Head of Kha <sup>c</sup> .f-re <sup>c</sup> (?)	1935—1936 No. 1684	From filling of shaft	J.E. 72212	15246	G. 37 (N.C.) unexhibited	Exc. at Giza VII p. 128 No. 20 pl. LV & LVI	—Diorite —IVth dyn.	—Finely done —Hairdress - Nemes —It lacks : a part from each of the upper surface of the Nemes, uraeus, nose beard.
3	Lower part of a standing statue of Kha <sup>c</sup> .f-Re <sup>c</sup> with šndyt	1937—1938 No. 2059	on a passage running along East faces of Kha <sup>c</sup> .f-Re <sup>c</sup> valley temple and Sphinx temple	J.E. 72213	15426	G. 37 (E.W. 2) unexhibited	ibid. IX, p. 82 (1) pl. XXXVII A, B  Porter & Moss III/1 p. 24 the one before the last	—black diorite —IV dyn.  —inscribed with title and name	—Finely done —Partly defected —Standing in the usual attitude <sup>(6)</sup> —Royal kilt (Bonnet, Tracht, Tafel II, 8).

## Cont. IA

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
3 (Cont.)									—Plinth inscribed vertically, with title and name. h. 36 (without pedestal) br. 3 (across the hips).

## (B) Male and Female Statues (excluding servant statues) :

Some of these statues are for known persons, even relatives of the king ; others are unknown. It gives variety of representations — among which the traditional ones for male and female. Most of them were found as expected in the serdabs (Nos. 4—7, 9—11, 15, 19, 20 (head, legs and pedestal only), 21-26, and Nos. 8, 16, 17 (in debris), 12, 13, 20 (in shafts, unprecised) 18, 19 (in chapels), 22 (entrance of the burial chamber), 28 (eastern chamber), 29 (in front of Nary chapel).

## (a) Female Statues : Eight statues, seven standing (Nos. 4-10) and one sitting (No. 11).

4	Statue of Mer, s <sup>c</sup> Ank <sup>i</sup> in a walking attitude	1930—1931 No. II, 275 A	In a serdab in Wepemneferet mastaba, southern wall	J. E 72214 G. 6315	14679	G. 47 S. 3.	Exc. at Giza 1930-1931, p. 180—181, 182, pl. LXV Vandier, Manuel III, p. 63 & Note 10 & pl. XIX/2.	—Limestone —IV dyn.	—Elegantly done —Found with head separated. Repaired now. The remaining bronze contour of the right eye refers to the original inlaid eyes, found lacking.  —Unusually represented with left foot stepping forward(?)
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[3]



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
4 (Cont.)							SASAE., 15, p. 73, fig. 17. Porter & Moss, III/1, p. 282.		—Generally in good preservation. —Jewellery: two bracelets one at each hand (8). —Hairdress: wig revealing the natural hair curved on forehead; traces of black colour. —Dress: Long tight revealing the features of the body. —Nails neatly done <sup>(9)</sup> H. 1.48 (with plinth) br. 0.38 (across shoulders) base 63 × 35
5	Second statue of Mer. s. 'Ankh	1930—1931 No. 275 B	With the precedent one	J.E 72215 G. 6316	14684	G. 47 S. 5 Center	Exc. at Giza 1930-1931, p. 180—181 & 183. pl. LXVI	—Limestone. —IVth dyn.	—Fine work —Head found separated, now repaired. —Inlaid eyes lacking

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
5 (Cont.)							Vandier op. cit. p. 63 & note 10 Porter & Moss, op. cit.		—The same walking attitude of the previous one. —Long transparent dress revealing the features of the body. —Plaited black (only traces) wig revealing the natural hair on the forehead. —Nails neatly done. —No jewellery, H. 142. br. (across shoulders) 36, base 55 × 33
6 pl. I	third statue of Mer. s. 'ankh	1930—1931 No. II-275 c	like the previous one	JE. 72216 G. 6317	14693	G. 47 S. 7 Center	Exc. at Giza 1930—1931 p. 180-181 183—184 pl. LXVII Vandier ibid & note 9 Porter &	—Limestone —IVth dyn.	—Fine work —Found in three pieces, now repaired. —only eyes lacking; slight defect on forehead. —The usual attitude of standing woman, (10)



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
6 (Cont.)							Moss, op. cit.		<ul style="list-style-type: none"> <li>—Black wig-only traces of colour; revealing a small pit of the natural hair.</li> <li>—The same tight dress.</li> <li>—No jewellery.</li> <li>—Nails neatly done. H. 135 (with base). (across shoulders), 37 base: 56×32</li> </ul>
7	Fourth statue of Meres- <sup>c</sup> Ankh.	1930—1931 N° II-275 D	The same as N° 4	J. 72217 G. 6318	14702	G. 47 S. 9 Centre	Exc. at Giza 1930—1931, p. 180—181, 184—185, pl. LXVIII Vandier Manuel, III p. 63 & n. 9 (=Giza 18) Porter & Moss, op. cit.	—Limestone —4th Dyn.	<ul style="list-style-type: none"> <li>—Fine work</li> <li>—Found in two pieces, now repaired.</li> <li>—Inlaid pupils, but restored.</li> <li>—Usual attitude of standing. (10)</li> <li>—Same dress.</li> </ul>

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
7 (Cont.)							Drioton & Sved, fig. 19		<ul style="list-style-type: none"> <li>—Same wig with traces of black colour. Natural hair appears in artistic curling.</li> <li>—No jewellery.</li> <li>—Nails neatly done. H. 132 (with base). br. across shoulders 35 base 41×35</li> </ul>
8	Statue of Meres- <sup>c</sup> Ankh standing	1934—1935 N° VI-1136	In the debris lying to the south of mastaba F.	JE. 87797	14752	R. 47 Centre Case F.	Excav. at Giza VI/3 p. 239 pl. XCVII & XCVIII (A) Porter & Moss, III/Ip. 260	—Painted limestone —Name & titles	<p>(The Four Statues (4-7) are distinguished by the consideration of the artist to every detail).</p> <ul style="list-style-type: none"> <li>—Finely done.</li> <li>—Care of the artist to show the disproportion of the lady's features.</li> <li>—tight, transparent dress</li> <li>—Short black hair.</li> <li>—Traces of black on the eyes and eyebrows.</li> </ul>



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
8 (Cont.)								—L.O.K. —Inscriptions giving name and titles  1. Titles mentioned twice on pedestal & plinth. 2. Mentioned without Hathor title on pedestal.	—Traces of yellow on the flesh. —Standing in the conventional attitude. (10)  —Inscribed vertically on the plinth back and on pedestal fronting foot. H. 33 Pedestal 16×8 (with slight defect from behind).
9	Statue of Nakht-Ka's wife	1935—1936	In the Southern part of S. rdab (31) of tomb N° 116	J. 87802	14757	R. 47 Centre Case F	Exc. at Giza p.91-93 pl.XLII Porter & Moss, III/1. p. 240	—Painted limestone —O.K.	—Fine work with head mended. —Usual attitude of a standing woman. (10) —Black pedestal & plinth,

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
9 (Cont.)									—Tight, transparent, long dress. —Plaited black wig just below ears. —Black eyes & eyebrows. —Coloured broad collar with counterpoise appearing on back. —Coloured broad bracelets as well as anklets. H. 34.5 br. 11 (across the shoulders).
10	Standing statuette of Sat-Meret, wife of Fifi  D 3 O A D	1933—1934 N° 1133 (S.29)	Fefi mastaba: in the Serdab discovered in the middle of the western wall behind the false door, to the left	J. 87806	14761	R.47 centre Case F	Exc. at Giza V, p. 279, 282 284, p.1. LIV & LII b. Vandier Manuel III, p. 63 & note 9	—Painted limestone —O.K. —Name and title	—Fine work —Usual attitude of a standing woman (10). —Long, tight dress. —Plaited black wig, leaving the natural hair appearing on forehead



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
10 (Cont.)			side of Fefi statue						<ul style="list-style-type: none"> <li>—Two coloured necklaces, dog collar shape and a circular one with a pendant.</li> <li>—Coloured bracelets and anklets.</li> <li>—Plinth coloured black, and red at back.</li> <li>—Inscribed vertically at the back of the plinth with name and title. H. 53 ; Br. 14.5.</li> </ul>
11	Seated statue of Mert-it.s daughter of Fify. <i>DOA</i>	1933—1934 S. 29	The same as No. 10 but to the right side of Fify statue	JE 87807	14762	R. 47 centre case F	Exc. at Giza V. p. 279, 282, 284 pl. LV & LIIB	<ul style="list-style-type: none"> <li>—coloured limestone</li> <li>—O.K.</li> <li>—Name &amp; title</li> </ul>	<ul style="list-style-type: none"> <li>—Fine work.</li> <li>—Good state of preservation although colours nearly disappeared.</li> <li>—Usual way of seated woman. <sup>(11)</sup></li> <li>—Tight long dress.</li> </ul>

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
11 (Cont.)									<ul style="list-style-type: none"> <li>—Short, black (only traces) wig with the natural hair appearing on forehead.</li> <li>—Traces of a broad necklace.</li> <li>—Traces of black colour on stool, filling spaces between body and arms.</li> <li>—Black line at back dropped wrongly while colouring the wig.</li> <li>—Inscribed with title and name on the left side of the stool. H. 39. br. 23.5 (across the shoulders).</li> </ul>



b) Male Statues : A set of 18 statues - 9 Standing (Nos. 12, 13, 15, 18-23 and 9 sitting (Nos. 14, 16, 17, 24-29).

[12]

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
12	Statuette of a standing man-(probably Me-rsw-nh cf. Selim Hassan 1929-1930 (p. 116)	1929-1930	Tomb of Mr. sw-nh Shaft No. 145	J.E.66621 G. 6266	15699	G. 42 sE 2 shelf	Exc. at Giza, 1929-1930 p. 114, 116-117 pl. LXXXVI	—painted limestone —Vth dyn.	—In a good state of preservation with slight defect on the upper right —repaired at left shoulder —Usual way of a standing man <sup>(6)</sup> and colouring. <sup>(12)</sup> —Natural features that reveal broad chest and shoulders, short neck. —White triangular loin-cloth. —Short curled black wig. —Necklace with fading colours. H. 53 br. 15.5
13	Statuette of a standing male	1929-1930	Tomb of Re-wr shaft No. 151	JE.66622 G. 6266	15697	ibid	Exc. at Giza 1929-1930 p. 20-21, 48, 114 pl. XXI.	—Painted limestone —Vth Dyn.	—In a good state of preservation, although discovered separated from pedestal

— 12 —

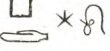
Cont. (IB/b)

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
13 (Cont.)			(statue) mastaba of Mr-sw-nh, shaft 145 (pedestal)				Vandier, Manuel III p. 127 & note 4, 132 & note 3; pl. XLVII 4, Hornemann I/125		—Left repaired. —Usual way of standing <sup>(6)</sup> and colouring, <sup>(12)</sup> but fainting. —White triangular loin cloth. —Short curled wig. —Coloured necklace. H. 55 br. 15
14	Statuette of a seated male may be Df3 nswt	1929-1930	Mastaba of Df3-nswt	J. 66623	14749	R.47 Centre case E	Exc. at Giza 1929-1930, p. 65 and pl. XLIV/2 Proter & Moss III/1, p. 265	—Painted limestone —O.K.	—Good state of preservation. Head restored —Sitting in the conventional way on a stool (13), with defect in its right side —Right hand clenched upon something resting vertically on thigh. A part of thumb is lacking, left open with palm down. —Few toes, are slightly damaged, also tip of nose.

— 13 —

[13]

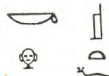



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
14 (Cont.)									--Dressed in a plain ceremonial, white kilt; broad necklace, bracelet in each arm. --Short curled black wig with slight damage on forehead. --Traces of red colour on body, finely reserved on face. --Nipples black. H. 27; breadth across the shoulders 10.
15 Pl. II	Statue of 	1934-1935 No. 1295	In his mastaba, in the debris against the Eastern wall of the Serdab.	JE. 72218	14962	G. 36 Centre	Exc. at Giza, VI/3 p. 106 pl. L1 & L11 Kielland, Geometry fig. 18 (p. 52)	--Painted limestone --O.K. --Name & title	--Magnificently modelled --Good preservation. --Conventional attitude of a standing man. <sup>(6)</sup>

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
15 (Cont.)									--Pleated white kilt with girdle and triangular pleated piece. <sup>(15)</sup> (Bonnet, Tracht, Tafel VI, No. 35.) --Short <sup>(16)</sup> curled black wig (only traces of colour). --Inscribed on the upper surface of the pedestal with title and name. H. 118 br. 31.
16	Grotesque seated naked man	1931-1932 No. 687	In the debris at Hesi's mastaba entrance	JE. 72225	15709	G. 42, S. 2	Exc. at Giza III pl. LXXI/2 Vandier, Manuel, III p. 66 (III D/c) 4 note and p. 565.	--Painted limestone --O.K.	--Good state of preservation. --rudely made <sup>(17)</sup> --Seated in the usual attitude, with both hands open, palm down --Black hair, eyebrows and moustache.



Ser No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
16 (Cont.)									<ul style="list-style-type: none"> <li>—Black design upon: the breast, abdomen and base between the legs.</li> <li>—Noticed is the deep straight space longing the back.</li> <li>—Chair with traces of colour (H. 4.1)</li> <li>—H. 15.5</li> </ul>
17	Grotesque seated man.	1931—1932 No. 681	In the debris at Hesi's Mastaba entrance	JE.72226	15710	G. 42 S.2	Exc. at Giza, III p.256. pl. LXXI/2  Vandier, Manuel III p.66 (IHD/c) note 4. & p. 565-	—Limestone —O.K.	<ul style="list-style-type: none"> <li>—Rudely made (17)</li> <li>—Seated in the usual attitude<sup>(18)</sup> with both hands open down.</li> <li>—Black design on left, side front.</li> <li>—Suggested as woman by Selim Hassan.</li> <li>—Undressed. H. 9.9. H. of chair 2.</li> </ul>

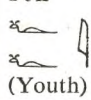
Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
18	Statuette of  (in his old age)	1934—1935 VI. 1148.	In the outer chapel of his mastaba	JE. 87798	14753	G. 47 centre case F.	Exc. at Giza, VI/3 p. 76,77 pl. XXXI and XXXII	—Grey granite —O.K. —title and name.	<ul style="list-style-type: none"> <li>—Finely made.</li> <li>—Good state of preservation.</li> <li>—Usual walking attitude<sup>(8)</sup></li> <li>—Short plaited wig.</li> <li>—Short ceremonial kilt.<sup>(14)</sup></li> <li>—Inscriptions on the right and left side of the pedestal. H. 44,5 Br. 21.</li> </ul>
19	Standing statuette of  (in youth)	1931—1932 N° III 393	In his mastaba. On the floor of northern serdab.	JE. 87799	14754	G. 47 centre Case F	Exc. at Giza III, p.110 pl. XXXII & XXXIII Vandier, Manuel III, p.62 & note 3	—Painted limestone —O.K. —Title and name.	<ul style="list-style-type: none"> <li>—Discovered in fragments.</li> <li>—Now repaired.</li> <li>—Coloured red.</li> <li>—Usual standing attitude.<sup>(8)</sup></li> <li>—Black long plaited wig.<sup>(19)</sup></li> <li>—Black eyes and eyebrows.</li> </ul>

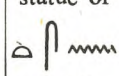


Ser. No	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
19 (Cont.)									—Ceremonial kilt with belt <sup>(14)</sup> and buckle. —Simple collar. —Inscription on the black pedestal in front of the right foot. h. 37 br. 19.
20	Standing statuette of a man.	1933—1934 N°. 1220 (b)	Body in shaft 856 Head, legs and pedestal in the serdab of K3-K3j- ‘nh chapel	JE.87800	14755	G. 47 centre case F	Exc. at Giza V 1933-1934, p. 318 N°38, pl. LXXV(?) Exc. at Giza VI/III, p. 27 (N°2)-28 and pls. X,XI. Vandier, Manuel III p. 62 (Giza 33)	—Limestone —O.K.	—Discovered in three pieces through two seasons. —now restored. —The head shows fine work. —The usual attitude of a walking man <sup>(6)</sup> —Short kilt with triangular apron (Bonnet, Tracht-Tafel V, No. 32). —Curled black wig. H. 66 br. 28


Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
21	Statue of Nekht-Ka	1935—1963	In the southern part of serdab 31, Tomb 6.	JE. 87801	14756	G. 47 Centre Case F.	Exc. at Giza VII, p; 91; pl. XLII. Ghalioungui BIFAOC, LXII, pp. 63, pl. VIII/A BIE, XLIV, p. 42	—Limestone —O.K.	—Good state of preservation. —Usual standing attitude <sup>(6)</sup> thumb extraordinary long —Black straight wig revealing ears and reaching the shoulders. —Black eyes, eyebrows and thin moustache. —Ceremonial kilt <sup>(14)</sup> coloured red, but the belt buckle is blue. —necklace. —Doubted to be suffering from Basedow illness. H. 48,5 Br. 17
22	Statue probably of Nekht Ka's son	1933—1936	The same as No. 21	JE.87803	14758	G. 47 centre cas F	Exc. at Giza VII, p. 93, pl. XIII.	—Painted limestone —O.K. (V-VI)	—Good state of preservation, with traces of red colour. —Finely made.



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
22 (Cont.)									—Standing with feet placed close together. —Black short curled wig. —Black eyes and eyebrows —Ceremonial kilt. (14) Belt with blue buckle. —coloured necklace. —H. 43,1: br. 12.
23	Standing statue of Fefi  (Youth)	1933—1934 S.29	In Fefi's mastabas serdab	J. 87804	14759	G. 47 Centre case F	Exc. at Giza V, p. 282-283, pl. LIII A, Ghalioungui BIFAOC, LXII pp. 63; pl. VI B BIE, XLIV, p. 42 pl. VA	—Painted limestone —O.K. (V) —Titles & name	—Perfect condition. —Fine work. —Usual attitude of standing (6) —Black wig, heavily curled. —White short simple kilt. —Black eyes, eyebrows & moustache.


Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
23 (Cont.)									—coloured necklace, counterpoise appearing on back. —Inscriptions on the black plinth & vertically along the left leg side. —Doubted to be suffering from Basedow illness. H. 64 br. 25.5.
24	Seated statue of  son of Fifi	1933—1934 s.29	as No. 10	JE.87805	14760	G. 47 Centre case F	Exc. at Giza V p. 282, 284, LIII B Ghalioungui BIFAOC, LXII. V. pl. LIIB & pp. 63 BIE, XLIV p. 42, pl. VB, Vandier Manuel, III p. 65 B & note 3	—coloured limestone —L.O.K.	—Perfect state, only part of r-thump is lacking; vivid colours. —Fine work. —Usual sitting attitude (13) —Ceremonial white kilt, with belt and buckle(14). —Curled black wig. short one. —Common broad necklace(20) —Inscriptions on the black stool in three horizontal lines.



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
24 (Cont.)									—Doubted to be suffering from the illness Basedow. H. 37,5. br 22
25	Statuette of Ankh- tef 	1933—1934 s.10	In his tomb serdab lying behind the northern false door	JE.87808	14763	G. 47 Centre, Case F	Exc. at Giza V, p. 232-233 pl. XXIV Vandier Manuel III p. 65 & n. 6 (= Giza 27) Ghaloungui, BIFAO LXII, p. 65. pl. VIII B left.	—Limestone with traces of black & red colours —O.K. (VI)	—In a nearly perfect condition. —Fine work. —Usual sitting attitude. —Long straight wig, revealing ears and parted from the middle. —Simple short kilt. —Vertically inscriptions on the right side of the pedestal. H. 53 Br. 24
26	Seated statuette of a man	1930—1931 No. 184	In the Serdab of Weteth-hetep	JE.87809	14764	G. 47 Centre Case F	Exc. at Giza II, p.4, pl. II fig. 1&2	—Limestone —O.K.	—Not in a perfect state. —Head was broken, now repaired

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
26 (Cont.)	may be Weteth- hetep								—Usual seated attitude. <sup>(13)</sup> —Curled black wig. —Short Kilt. H. 50 Br. 29.
27	Seated statuette of a man	1934—1935 No. VII 1611	At the entrance of a burial chamber west of the unfinished mastaba.	JE.87810	14765	G. 47 Centre Case F	Exc. at Giza VII p. 128, No. 22, pl. LVIB	—Sandstone —O.K.	—Nearly in a perfect state : part of r. thumb lacking, base restored. —Fine work. Usual attitude of a seated man <sup>(13)</sup> . —Ceremonial white(traces) kilt (Vandier, III 107 fig. 10/7). —Long black (traces) plaited wig parted in the middle and revealing ears. H. 31 Br. 21.
28	Seated statue of a man	1931—1932 Exc.No. III 334	In the filling of the	JE.87811	14778	G. 48 Centre Case G.	Exc. at Giza III, p. 11, (4), pl.V.	—Painted limestone —O.K.(V-VI)	—Good preservation. —Moderate work. —Usual sitting attitude <sup>(21)</sup>



Ser. o.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
28 (Cont.)	probably Dersemat		eastern chamber Mastaba of Dersemat (Shaft 538)				Ghalioungui, BIFAOC, LXII, pp. 63. BIE XLIV p. 42, pl. IIIB Vandier, Manuel III, p. 65 & 3		<ul style="list-style-type: none"> <li>—Black straight long wig parted in the middle to end.</li> <li>—Body coloured red.</li> <li>—Black eyes and eyebrows.</li> <li>—Short white kilt with belt.</li> <li>—Neck &amp; leg slightly thick</li> <li>—Head bent forward.</li> <li>—Exorbitant eyes., may be suffering of basedow illness.</li> </ul>
29	Seated statue of 	1933—1934 No. 1078	Between the feet of a group statue discovered on the platform at the end of Nary chapel	JE.87812	14779	G. 48 Centre Case G.	Exc. at Giza V, p.301-302 pl. LX, Ghalioungui ibid, p. 63, pl. VB; BIE, XLIV, p. 42, pl. III B Vandier, Manuel III p. 65 n. 3	<ul style="list-style-type: none"> <li>—Painted limestone</li> <li>—O.K. (V-VI)</li> <li>—Name and titles</li> </ul>	<ul style="list-style-type: none"> <li>—In a nearly perfect condition</li> <li>—Usual sitting attitude (18)</li> <li>—right hand missing.</li> <li>—Black straight long wig parted in the middle.</li> <li>—White short kilt.</li> </ul>

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
29 (Cont.)									<ul style="list-style-type: none"> <li>—Unusual opened black eyes tended to be exorbitant</li> <li>—Doubted to be suffering from basedow illness.</li> <li>—Inscriptions on the right of the coloured stool.—</li> <li>—Features reveal old age.</li> </ul>



## (C) Parts of male statues :

A set of Nine objects finely done (Nos 30-38) : Seven (Nos. 30-33-38) are mere heads, No. 32 with part of the body. The ninth (No. 31) represents the upper part of a statue with hands in special representation. Five of them (Nos. 32,35,38) were found in shafts ; (No. 31) discovered in a burial chamber, two (Nos. 30, 33) near serdabs and No. 34 in the debris of a channel.

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
30 pl. III	Part of a head of a statue	1929-1930	Tomb of Re'-wr from sand near serdab No. 14.	JE.66625 G. 6265	14750	G. 47 Centre case E	Exc. at Giza 1929-1930 p. 22, 24, pl. XXIV. Lange & Hirmer 1967, pl. 51, p. 61 : Vandier Manuel III, p. 127 & note 4. p. 133 & Note 5. pl. XLVII 5/15. Porter & Moss, III/I p. 268. TTE, 24	—Limestone —O.K. (Vth dyn.)	—Good state of preservation.  —Finely made. Considered as typical of the statuary of the end of the IVth and Vth dyn.  —Curled wig.  —Charming smile covers the face and a vivacious look, that figures the very spirit of the O.K.  —Exhibited in the 5000 year Exhibition (53) H. 26. 5
31	Upper part of limestone statue may be of Hetepi	1933—1936 No. 1688	Mastaba of Hetepi just behind the closed blocks of the	JE. 72220	15105	G. 42 S. 2	Exc. at Giza VII, p. 103 & pl. XLVA. Hornemann, Types, IV/	—Limestone —O.K.	—Good state of preservation.  —Only severe damage to nose and chin.

## Cont. (IC)

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
31			burial chamber eastern wall in shaft N° 1546 (22)				1139		—Finely done.  —Arms crossed over the breast. Hands open. palms down.  —Long plaited wig revealing the ears.  —Smiling face H. 29.
32	Head from a male statue with a part of body	1933—1934 No. 1108	Mastaba of Wer-khwwf shaft No. 973	JE.72221	14776	G. 48 centre Case G.	—Exc. at Giza V, p. 254, pl. XXXI, Egyptian Museum, 1970, p. 52 Kees, 1955, Ab. 41 & 1961 23 b. Lange & Hirmer, 1967, p. 66, pl. 79 Porter & Moss, III/I, p. 255	Limestone O.K. (VI)	—Perfect condition after restoration.  —marvously and realistically sculptured.  —repaired at Giza in 1934.  —Cleaned by Dr. Zaki Iskander in 1947.  —Reveals the features of a middle age man with small slanting lower plain face.



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
32 (Cont.)							Egyptian Museum (1967-Jap. edition), 54.		—Fold on body refers to athletic character. —Short hair. H. 32.
33 pl. IV	Part of the upper part of a head of a small statuette	1929—1930 No. 197	In a passage north to serdab No. 23	JE.72223	14751	G. 47 Centre case F	Exc. at Giza 1929-1930 p. 36/4 cf. p. 31	—Painted limestone —O.K.	—Noze chipped. —Hair curiously waved. —Fine work. H. 08
34 pl. V	Head of male statue	1933—1936 No. VI. 1322	In the debris west of southern end of the tunnel under the causeway of the second Pyramid.	JE.87813	14777	G. 48 Centre case G	unpublished if not the one mentioned in Exc. at Giza VI/III p. 240 (5) wrongly as female head.	—Limestone —O.K.	—Good state of preservation with slight damage in the left side-wig, eyebrow —Fine work —Slight damage on mouth. —Short curled wig. —Faint traces of colour.

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
34 (Cont.)									—A part of the plinth of the original statue is preserved behind the head. H. 16,5 — Br. 11.
35 pl. VI	Head of a statue	1931—1932 No. III.305	In the debris filling shaft 445	JE.87814	14781	G. 48 Centre Case G	Unpublished	—Granite with traces of paint. —O.K.	—Perfect state —Very fine work —Black eyebrows and red moustache —A new manner in representing the eyes dispensing with artificial ones. —Black straight wig parted in the middle and revealing the ears. H. 16.



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
36	Head of a basalt statuette	1932—1933 IV 824	In the debris filling shaft No. 882 (mentioned wrongly in the JE burial Chamber of shaft 48).	JE.87815	14780	G. 48 Centre Case G	Exc. at Giza IV, p. 152/6 pl. XLII	—Basalt with traces of paint —O.K. (V)	—Medium state of preservation—Nose repaired (cf. pl. XLII). —Fine work. —Short black curled heavy wig, revealing high manufacture. H. 16.
37	Head of a man may be relative to Chephren.	1938 No; 2077	In the debris filling the shaft south west the rock tomb east of that of Nb-m-3ht.	J.E.87816	14711	G. 47 Centre Case A	Exc. at Giza IX, p. 86, pl. XLD, XLI, A., B	—Black granite —IVth Dyn.	—Nearly perfect state of preservation. —Slightly damage on the nose and r. eyebrow. —Expressive features. —Fine work. —Short black curled wig, H. 30.5

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
38	Head of a reverend may be a prince	1931—1932 III 310	In shaft No. 492 (fig. 223) in the mastaba of Hesy and Ni-nkh-Hathor	JE. 87817	14783	G. 48 Centre case G	Exc. at Giza III p. 253 pl. LXX	—Painted lim stone —O.K. (V)	—Slightly damaged. —Features finely modelled. —Fine work. —Eye, eyebrows, false beard painted black (traces). Face and neck red. —Long straight wig revealing ears. —Faint traces of coloured necklace (red and blue). H. 24.




**D. GROUP STATUES :**

It covers :

- a) Personal doubled statues (23) (Nos. 39—42)  
 b) Family statues (Nos. 43, 44).


## a) Personal Doubled Statues :


Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
39	Triple statuette of "Re <sup>c</sup> -Wr." 	1929—1930	Against the southern wall of the pier.	JE. 66615 G. 6626	15698	R. 42 S.2 shelf 2	Exc. at Giza, I, p. 12-13, pl. VIII/1 & IX Vandier, Manuel III, p. 87 & note 2, p. 89 & note 9, p. 127 & note 4, 6, p. 131, 137. pl-XXXIII/3 Hornemann V/1364.	—Painted Quartzite —Vth Dyn. —Name & titles	—Good state of preservation. —Three figures representing Re <sup>c</sup> -wr. The same height (62 cm.), except the middle one, is two cm. taller owing to the shape of the wig. Br. 14 cm. of each. —The middle wig is a curled one, the two others are the same: straight hair revealing ears. —Usual standing attitude (6) —Ceremonial short kilt. —Inscriptions in red, horizontally near the right & left legs of the middle figure —Pedestal 42 cm.

Cont. (ID/a)

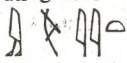

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
40	Triple statuette of a standing male	1929—1930	Tomb of Re <sup>c</sup> -wr shaft No. 151	J.E. 66616 G. 6265	14744	G. 47 Centre Case E	Exc. at Giza I. p. 20, 21, 48, 114, pl. XXII, Vandier Manuel III, p. 87 note 2 & 3; 88 & note 1, 89 & note 10, 127 & note 4, 6, 132-133, pl. XXXIII/4 (attitude XV/D-b); Hornemann V/1361 Mélanges Maspero I/2, p. 812 pl./III/4, Porter & Moss, III/1 p. 268. SASAE, 15, 152, Abt. 33; Smith. 1949, p. 74.	—Painted limestone —Vth Dyn.	—In a good state of preservation except the legs of the left one. —Standing but legs beside each other. —Two right ones have arms hanging downwards grasping something, the third had his right arm in the same way and his left grasping the central figure under breast, palm opens downward. —Black curled wigs. —White ceremonial kilts (14). —Coloured necklaces-bands of blue and green beads. The middle one differs in shape.



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
40 (Cont.)									—Black eyebrows and lashes. H. 63.5 Breadth of pedestal 50cm
41	Triple statuette of Mersu-Ankh <sup>(24)</sup> 	1929—1930	In Serdab No. 1 situated at the extreme northern end of the chapel	JE. 66618	14746	G. 47 Case E	Exc. at Giza, I p. 114, pl. LXX; Vandier, Manuel III, p. 87 and note 5, 89 & note 12, pl. XXXIV/3, (attitude XV/E. a, III C) Hornemann, V. 1366, Smith, 1949, p. 77 SASAE, 15,	—Painted limestone —V dyn. —Name and titles.	—Exhibited in the 5000 years exhibition. (53) —Good state of preservation. —Represents Mer-sw- <sup>nh</sup> twice sitting <sup>(25)</sup> and one standing in the usual attitudes. <sup>(6)</sup> —Long wigs, natural hair of the central one is visible on the forehead, curled hair for the standing one. —White ceremonial kilt. (14) —Blue girdle with buckle.

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
41 (Cont.)							p. 154, Abb. 34 Mélanges Maspero I/2, p. 811, note 5, pl. III/5 Porter & Moss III/1, p. 270		—Wide green necklace differs slightly from that of the standing one, fading colours —Inscribed in two vertical lines on the left & middle space of the chair. A third vertical one on the pedestal. H. 65 br. 57.
42 pl. VII	Double statue of 	1929—1930	In Serdab No. 2 situated at the extreme northern end of the chapel	JE. 66620	14748	G. 47 Case E	Exc. at Giza, I p. 115, pl. LXXII Vandier, Manuel III, p. 89 & note 2, pl. XXXIII/1 attitude XV/A, Hornemann, IV/1097. JEA 26, p. 48, pl. X (3) Mélanges Maspero I/2,	—Painted limestone —Vth Dyn. —Name & titles. (in four places; 3 on pedestal & one on plinth).	—Good state of preservation with restoration in the right head. —Standing in usual attitude <sup>(6)</sup> with curious way in position of arms. —Opposition in position of arms. The interior arm hanging down, hand holding object, thumb up, the other is against breast with open hand just below the shoulder.



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
42 (Cont.)							p. 812-813, pl. III/1 Smith, 1949, p. 77		<ul style="list-style-type: none"> <li>—Short black curled wig</li> <li>—Wearing white skirt with apron (Bonnet Tracht Tafel, V, No. 32).</li> <li>—Coloured collar (white, green, blue) in bad state.</li> <li>—The plinth coloured black.</li> <li>—Inscriptions: vertically between the arms of both figure, and on pedestal and by feet. H. 59, 5.</li> </ul>
4	b) Family statues :  Statuette of Mersu-ankh and his two daughters  (the elder) 	1929-1930	In serdab No. 2 of his tomb	JE.66617	14745	G. 47 Centre case E	Exc. at Giza I, p. 116 pl. LXXIV. Vandier, Manuel III, VII G.f. p. 78 note 8 pl. XXVI /4. (cf. VIIA. b, VI, A.a) Hornemann	—painted limestone —Vth Dyn. —Titles & names.	<ul style="list-style-type: none"> <li>—In a good state of preservation, only the nose of the smaller daughter is damaged. vivid colours.</li> <li>—The deceased, with moustache, in the centre (H. 38) flanked by two daughters</li> </ul>

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
43 (Cont.)							V/1385 Smith, 1949, p. 27.		<ul style="list-style-type: none"> <li>The older (left) places her right arm on his shoulder. The smaller encircles his waist with her arm.</li> <li>—All standing in the usual attitude on a pedestal, with plinth behind. Pedestal with defect at the front corners..</li> <li>—Hair: Man putting a curled black hair. Daughters wearing black straight wig leaving natural hair appearing on forehead. Both wigs spread outwards down the sides of the face near to the shoulders.</li> <li>—Father wearing a ceremonial white kilt. (14) Daughters a long sleeveless white tight garment with broad shoulder straps. (26)</li> <li>—Black brows and eyelashes.</li> </ul>



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
43 (Cont.)									—coloured bracelets for the two daughters ;banded coloured necklaces (blue, green, black for the father, black, white, blue for the daughters). —Inscriptions on pedestal in three groups, each fronting every figure. H. 43.
44	Diad : a female and male statuette probably Mrs. Neb and his wife standing.	1929—1930	In serdab 2 of his tomb	JE. 66619	14747	G. 47 Centre Case E.	Exc. at Giza I, p. 115-116, pl. LXXIII Vandier, Manuel III p. 74 & Note 1, attitude VII (B-a-p.74) Hornemann V 1146.	—painted limestone —Vth dyn.	—Good state of preservation. —In the usual attitude of standing. But the male legs are level, slightly separated. —Black wig for both, curled for the male, straight for the female. —Black eyebrows and lashes, moustache for male (traces) owing to some defects.

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
44 (Cont.)									—Male wears a seven banded necklace coloured <sup>(20)</sup> yellow and green alternately. —Female wears eight banded one with same colours ended with a row of beads. and anklets coloured blue, yellow and black. —Male puts a white triangular simple skirt, female a light long sleeveless robe with shoulder straps. —Female grasping right male's shoulder tenderly, by her right hand, left arm following body, open hand. Both male arms are following body, clenched hands. H. 50



**E) Statues for the needs of the deceased :**

Among these finds were models representing three needs of the deceased

a) Ritual needs<sup>97</sup> (No. 45) : b. Erotic needs<sup>98</sup> (No. 46) : and c. daily life needs<sup>99</sup> Nos. 47-63. All are of limestone the leading material of such statues in the Old Kingdom : especially Vth dynasty. Most of them were discovered in the tombs' serdab (Nos. 45, 47, 50, 53, 55, 57 to 61; three in shafts (Nos. 46, 52, 63) and two in a passage between two tombs (Nos 51, 54).<sup>(90)</sup>

**a) Statues for ritual needs :**

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
45 pl. VIII	Smiling seated reading <sup>(91)</sup> scribe.	1934—1935 No. 1218	In the serdab lying behind the northern end of the eastern wall of K3-m-n-fr.t corridor chapel i.e. in K3-k3j-nh chapel.	JE. 72222	15635	G.42 S.6 C	Exc. at Giza VI/III, p.25A 27, (1) pl. XIV	—Limestone O.K.	<p>—Found broken.</p> <p>—Now mended without any imperfectness</p> <p>—Usual attitude of a reading scribe, seated cross legged with a roll of papyrus spread across the legs, Hands seizing the extremities of the papyrus.</p> <p>—Long straight wig revealing ears.</p> <p>—Short white kilt.</p> <p>—Traces of black colour on pedestal, eyes &amp; eyebrows.</p> <p>—Exhibited in the 5000 years Exhibition<sup>(92)</sup> H. 18.5,</p>

**b) Statues for erotic needs :**

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
46	Nude statue of a woman	1933—1934 No. 1066	In the debris of shaft No. 1003, situated against the middle of the western wall nearly opposing the entrance of the rock-cut tomb of Nef-nemtet.	JE. 72219	15427	G. 37 cage East W 2	Exc. at Giza V, p. 199-201, pl. XIIc Vandier, Manuel III p.63 and note. 9. Breasted. Servant statues, ch. VII, I/4 (p.94.cf.p.93)	—Limestone —O.K.	<p>—Lacking head, neck and feet, upper left arm damaged.</p> <p>—Nude figure with legs together and arms at sides, palms down.</p> <p>—Finely modelled.</p> <p>—Suggested by Selim Hassan to be Ka-wesert the kings' concubine. (p. 200). H. 34 L. 13.5.</p>



## c) Statues for Daily Life Needs :

## 1. Working Women

[42]

— 42 —

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
47 pl. IX	Breweress	1929—1939	Serdab No. 1 in Mr. sw-nh-tomb	JE. 66624	14775	G. 48 Centre Case G	Exc. at Giza p. 115, pl. LXXI Vigneau & Drioton, Musée Egyptien, 38 Smith, 1949, p. 97 (b/5) EM., 1963, 11 Lange & Hirmer, 1967 p. 62-63, pl VII (mentioned wrongly as being from Sakkarah) Hornemann, IV, pl. 983 Wenig, pl. 15 (lower)	—Painted limestone —O.K. (V)	<p>—Good preservation, only a small fragment is lacking from left leg.</p> <p>—Gesture<sup>32</sup>: Leaning on a large vase with sieve on top, with hands turned inside pressing flat on the bottom of the sieve &amp; knees slightly bent, in the state of making beer. Noticed is the movement of her head.</p> <p>—Long black wig leaving natural hair appearing on forehead.</p> <p>—Black lashes and eyebrows, body reddish brown.</p> <p>—A plain long white skirt reaching to the middle of legs.</p> <p>—Coloured necklace (green &amp; white)</p>


Cont. (IEc/1)

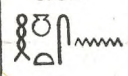
Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
47 (Cont.)									<p>—Sieve is painted dark yellow and black.</p> <p>—Vase is dark imitating pottery, hold steady by means of a basket work ring placed under. H. 26,7 br. 7,5.</p>
48 pl. X	Squatting bakeress <sup>33</sup>	1934—1935 1250(1251/7)	Mastaba of Nj-k3w ht-Hr in the narrow serdab against the southern wall of the fore-court.	JE.72227	15341	G. 37 cage East Nb (unexhibited)*  *I hope to exhibit such items shortly.	Excavations at Giza VI/3, p. 180 pl. LXXVIII A, B, C (Cf. pl. LXXIII B, C & p. 173, vol. V, p. 148 & pl. X)	—Painted limestone —O.K.	<p>—In good state of preservation except for the pedistal front part and fireplace which are missing.</p> <p>Gesture: A woman squatting: L. leg up parallel to the body and r. doubled under her foot horizontally, Head turned right as protection from fire. Left arm bent with hand raised and placed open upon the nape of the neck. Right hand rests upon left knee. It was grasping something.</p>

— 43 —

[43]



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
48 (Cont.)									<ul style="list-style-type: none"> <li>—Short hair with faint traces of black, parted from middle.</li> <li>—Tight dress passing over the left shoulder and downwards, above the knees.</li> <li>—Traces of black colour upon pedestal.</li> <li>—Traces of dark yellow colour upon back foot. H. 24 Br. 10.</li> </ul>
49	A woman kneading dough 	1934-1935 VI 1255	ibid	JE. 72231	15346	G, 37 cage East N. b (unexhibited).	Exc at Giza VI/3, p. 181 pl. LXXX(A, B, C) Cf. pl. LXXXIII B.C. & p. 173	<ul style="list-style-type: none"> <li>—Painted limestone.</li> <li>—O.K. (v)</li> <li>—Name and one title (hm k3)</li> </ul>	<ul style="list-style-type: none"> <li>—Good state of preservation.</li> <li>—Finely modelled. Gesture<sup>(34)</sup>: Kneels on the ground holding a spouted vase between her knees.</li> <li>—Vase coloured red, traces only remaining, and containing material for kneading.</li> <li>—It rests on a limestone base, forming with the statue one piece.</li> </ul>

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
49 (Cont.)									<ul style="list-style-type: none"> <li>—Traces of yellow colour on skin.</li> <li>—A white close fitting tunic extending from below her breasts to half way down the thighs.</li> <li>—Black hair cut very short. colour gone from its front half.</li> <li>—Pedestal inscribed on the front by name and title. It forms an independant piece, namely the statue is inserted in. 24 × 11, 3 H. 29 Br. 9.4.</li> </ul>
50	Grinding woman with a cheerful look 	1934—1935 No. 1251	ibid.	JE. 72234	15342	G. 37 cage East Nb (unexhibited)	Exc. at Giza VI/3, p. 177-8 pl. LXXIV (Cf. pl. LXXVII B.C.).	<ul style="list-style-type: none"> <li>—Painted limestone</li> <li>—O.K. (v)</li> <li>—Name &amp; one title (hm k3)</li> </ul>	<ul style="list-style-type: none"> <li>—Good state of preservation. Gesture<sup>(35)</sup>: Kneeling, holding the upper grinding stone with both hands, right foot rests on the left heel.<sup>(36)</sup></li> <li>—A short white kilt supported by a belt around hips,</li> </ul>

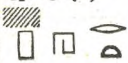


Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
50 (Cont.)									<ul style="list-style-type: none"> <li>—Wearing a skull cap that hides hair except fringes and side-locks.</li> <li>—Traces of black on eyes and eyebrows and pedestal, dark yellow on body; grinding stone dark red.</li> <li>—Vessel of grain lies at upper end of larger grinding stone.</li> <li>—Name and title inscribed on the pedestal - 24 × 10 with lacking front. H. 24.</li> </ul>
51	Grinding woman	1931—1932 No. 392	In the passage between the tombs of Mdw-nefer and Sed-he-tep	JE. 72235	15343	G. 37 cage East N <sup>b</sup> (unexhibited)	Exc. at Giza III, p. 111, pls. XXXIV & XXXV	—Painted limestone —O.K.	<ul style="list-style-type: none"> <li>—Perfect, state only a small fragment in the right arm is lost. r. arm restored.</li> <li>—Gesture<sup>(35)</sup>: Kneeling grasping a red painted stone with both hands rubbing it on another longer one. Right foot placed upon left heel.</li> </ul>

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
51 (Cont.)									<ul style="list-style-type: none"> <li>—Short tight kilt.</li> <li>—Black plaited long wig.</li> <li>—Eyes and eyebrows coloured black. H. 16.5 L. 19.8</li> </ul>
52 pl. XI	Squatting Woman	1930—1931 II. 253	In shaft No. 350	JE. 72237	15243	G. 37 N. 3 (unexhibited).	Unpublished	—Limestone —O.K.	<ul style="list-style-type: none"> <li>—Bad state of preservation that it leaves the woman with unprecised task.</li> <li>—Face injured.</li> <li>—Left arm lacking as well as part of the right one.</li> <li>—Feet lacking as well as parts of legs.</li> <li>—Gesture: sitting with drawn up knees may be sifting or baking<sup>(37)</sup></li> <li>—Wearing a short dress fastened to her left shoulder</li> </ul>



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
52 (Cont.)									—Fine straight wig partly damaged decorated with a ribbon. Hair plaited under ribbon. H. 31.
53	Woman grinding corn	1933—1934 S. 10	In a Serdab behind the northern false door in 'Ankhtef Mastaba	JE. 87818	14739	G. 47 Centre case D	Exc. at Giza V, p. 232, 233 pl. XXV (cf. pl. LXXXIII B.) Lange & Hirmer 1967 63; Montet, Lives, p. 41 T.H.31 (p. 64)	—Limestone —O.K.	—In a good state of preservation. —Gesture <sup>35</sup> : Kneeling with toes touching the ground. Hands seizing the upper grinding stone. —Short kilt. —Short plaited hair bound with ribbon and encircled with fillet. —Vessel of grain lies at upper end of larger grinding stone. —Exhibited in Expo 67, Montreal - Canada. H. 28.3 Br. 10 (across the shoulders).

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
54	Woman grinding corn	1931-1932 No. III 389 and IV 813 (head) discovered in season 1932—1933	Second (38) statue found in the passage between the tomb of Medwnefer & Sedhetep without head. Head discovered while unearthing the city pyramid of Q. Khent-Ka's.	JE. 87819	14740	G. 47 Centre. Case D	Exc. at Giza III n. 111 pl. XXXVI. & IV, p. 36 No. 8.	—Painted limestone —O.K.	—Head found separated, now mended. Slight damage. Front part of the larger grinding stone is lacking. Traces of yellow colour on body. Gesture (38): kneeling grasping a red painted stone with both hands rubbing it on another larger one. Left foot placed, upon right heel. —Short kilt. —Covering her hair with a skull cap revealing traces of the natural black hair. —One black bracelet in each wrist. H. 17 L. 14 Br. 8
55	Woman sifting flour (39) 	1934—1935 No. VI 1258	Found in Nj-K3w-Ht-hr mastaba in	JE. 87820	14741	G. 47 Centre Case D	Exc. at Giza VI/III, p. 178, LXXV (A,	—Painted limestone.	—Good state but head lacking.





Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
55 (Cont.)			the debris of the serdab against the fore court southern wall				B, C) cf. p. 173 & pl. LXXIII B, C.  Exc. at Giza V, p. 48 + pl. X).	—O.K. (V)  —Title (hm k3) and part of name.	—Finely modelled, with intention to every detail.  Gesture : A sitting woman with her knees drawn high against her chest grasping with both hands a circular wicker sieve curving slightly upwards owing to the weight of the flour within it. The sifted material is seen in the basketry below.  —Short kilt held with belt.  —Traces of dark yellow on body.  —Semi-rectangular pedestal, painted black inscribed on the front surface. H. 24, Br. 13.5, L. 26.

## 2. Working Men ;


Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
56 pl. XII, XIII	Bedouin or lean servant with task unidentified	1930—1931 II-197	Unknown	JE. 72224	15825	G. 42 N. 2 E	To be published in BIE, Communication of 4-11-1974 by Dia Abou-Ghazi and Paul Ghalioungui	—Painted limestone  —O.K.	—Part of statuette : head, greater parts of the arms, feet and part of the left leg are missing.  —Gesture : Sitting with knees drawn up together. Task unprecised, may be forming a vessel. (40)  —Dress : short kilt fastened to his left shoulder.  —Distinguished with representing clearly his ribs and backbone which reveal his thinness as well as the little flesh on his leg.  —Such features are designation of Beja people on Egyptian monuments. (A detailed study is in press). H. 11.

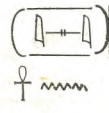


Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
57	Iw šši * kneading taken by Selim Hassan as a fuller (41)  *Mentioned in Ex. at Giza VI/3 'wrongly as Inpw šši.	1934—1935 No. 1252, 1250/1 (1253/7)	Found in Nj-K3w-Ḥt-Ḥr Mastaba In the serdab against the fore-court southern wall	JE. 72228	15344	G. 37 cage East N.b. unexhibited	Exc. at Giza VI/3, p. 180-181, pl. LXXIX A, B (cf. pl. LXXXIII B, C. & p. 173,  Exc. at Giza V, p. 48 pl. X	—Painted limestone —O.K. (V) —Title (ḥm k3) & name	—Good state of preservation. Nicely modelled. —Gesture <sup>(45)</sup> . A man kneeling down, with both legs bent under him. The feet crossed behind spung on heel. S. lim Hassan takes him as engaged in washing a garment on a sloping block of stone. Also may be considered as kneading. —Dress: short white kilt with belt. —Short hair. —Traces of red colour on body, and black on head. —Pedestal coloured black and inscribed with name on its left side. Rectangular in shape with slightly bulging sides. H. 27.5, L. 25, Br. 11.

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
58	A man cleaning jar (42) 	1934—1935 VI 1253	ibid	JE.72229	15347	G.37 cage East Nb (Unexhibited)	Exc. at Giza VI/3, p. 179, & LXXVI, A, C, <sup>(48)</sup> (cf. pl. LXXIII, B, C. & p. 173 ibid, V, p. 48 & pl. X)	—Limestone with traces of painting —O.K. (V) —Inscribed with name and title (ḥm k3)	—Good state except for right hand which is missing. —Finely modelled. Gesture <sup>(44)</sup> : A squatting man engaged in pitching jars grasping one by left hand & feet. The left foot is held against the lower part of the jar's side, this caused the lowering of the knee and shoulder. Nine additional vases in three rows lie directly in front of him, with their open end toward him. The man with the vase are carved separately and recessed into the rectangular base with the group of the nine darkened red vases. —Wearing very short white skirt revealing parts of his body and garment leaving right shoulder free. —traces of colour denoting black hair.




Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
58 (Cont.)									—Black base (traces only) with inscription of name and title on the left surface L. 28 Br. 14, H. 25. Figure painted dark red H. 25 br. 11.
59	A man called  cooking (45)	1934—1935 VI 1254 (1250/3 125/7)	ibid.	J.E. 72230	15348	G.37 cage East Nb (Unexhibited)	Exc. at Giza VI/3, p. 179, pl. LXXVII, A.B. Cf. pl. LXXIII B.C. & p. 173; ibid V, p. 48 X.	—Limestone with traces of paint —O.K. —name and title	—Good state of preservation. slight defects. Gesture <sup>(46)</sup> Man squatting with knees slightly apart, before a basin, the basin rests on a bed of charcoals lying on a circular base, may be a hearth. He is seizing the basin with his left hand, while stirring, the contents of the pot by the help of some thing by his right hand. Another flat vessel is fronting him to receive the food after frying. The figure and the cooking pot are modelled separately to be recessed in the rectangular base,

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
59 (Cont.)									—Wearing a short white kilt. —Short black hair (traces of colour). —Flesh, fire place, vessels coloured red. —Pedestal black, with inscriptions on the left side. —Figure H. 23 br. 0/0. —Base H. 4.5 br. 13.
60	A man cleaning a goose named 	1934—1935 No. 1256 (1250/5 1245/7)	ibid.	JE. 72232	15349	G.37 cage East Nb (Unexhibited)	Exc. at Giza VI/3 p.179 pl. LXXVI B.D <sup>(47)</sup> cf. pl. LXXII B,C & p.173 and ibid V, p.48 + pl. X	—Painted limestone —O.K. (v) —name	—Good state of preservation. —Modelled, finely and realistically.



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
60 (Cont.)									<p>—Gesture:<sup>(48)</sup> A man squatting with one leg up parallel to his body and other doubled under him. His left hand steadies a goose with a severed head. A hole appears in his closed right hand referring to some thing lacking may be a knife or a fan as the goose seems to be placed on a brazier<sup>49</sup>.</p> <p>—short white kilt</p> <p>—Short hair.</p> <p>—Goose coloured yellow.</p> <p>—The man with the goose form a unit to be recessed in the rectangular black base. H.26, Br. 13. H. of the figure 23. H. of the object 28 br. 10.50.</p>

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
61	 <p>Man/pressing mash through sieve into a vessel</p> <p>* cf. Ranke, Personnenamen, p. 82/3</p>	1934—1935 No. 1257 (1250/6)	ibid	JE. 72233	15345	G. 37 cage East Nb (Unexhibited)	Exc. at Giza VI/3, p. 180 pl. LXXIX C,D,E (cf. LXXIII B,C, & p. 173 ibid. V. p. 48 & pl. X	<p>—Painted limestone</p> <p>—O.K. (v)</p> <p>—inscribed with name</p>	<p>—Very good state of preservation.</p> <p>—Lifely modelled. Gesture:<sup>(52)</sup> Brewer bending forward with hands on the bottom of the sieve, partly submerged in the mash. The sieve is resting on a spouted dark red jar, hold steady through a yellow basket-work ring placed under it. Knees slightly bent.</p> <p>—Figure coloured dark red.</p> <p>—Short white kilt held by a belt.</p> <p>—Short curled black wig (traces only).</p> <p>—Name inscribed on front surface of the black pedestal.</p>



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
61 (Cont.)									—Rectangular base with rounded corners in front. 20×9 H. 32.8 br. 10.3
62 pl. XIV	Fragment of statue	1930—1931 No. 244	Mastaba south of Nefer-nysut	JE.72236	15818	G 42 N.2 E	unpublished	—Painted limestone —O.K.	—A fragment in good state —vivid colours. —head and arms are lacking. —Legs partly represented, separately modelled. —Wearing a short kilt, back to front uncovering his genitals Gesture : It seems to be that of a butcher, supports this the way of dressing the kilt and the position of the legs <sup>(50)</sup> . H.16.5.
63	Beheaded man	1930—1931 No. 267	In shaft No. 366 bis of Kd-ns mastaba	JE. 72238	15425	G.37 cage East W.2. unexhibited	Exc. at Giza II, p.103, pl. XXIX 1&2	—White limestone —O.K. (V)	—In imperfect state : head and arms are lacking. Body in three pieces, now mended.

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
63 (Cont.)									—Gesture : kneeling on his right knee with foot turned upside down resting on the base. Left knee is drawn up. May be a brazier or a smith <sup>(51)</sup> —Wearing a short kilt fastened to his left shoulder H. of statue 24 br. 15



## II : VASES :

A small set of vases (Nos. 64-73); not limited within the Old Kingdom period, but goes till late period. It is also of different materials: one alabaster (No. 64) another green faience (No. 65), five are pottery ones (Nos 65-71), Nos. 72 & 73 of copper.

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
64	Jar with hawk headed lid	1934—1935 No. 1179	In the surface sand to the north-east of the mastaba of Queen Rhit-Re <sup>c</sup>	JE. 72305	12870	U. 49 s Case K	Exc. at Giza VI/3, p.242 No. 1, pl. II (f)	—Alabaster —late period	—In a very good state of preservation. —Finely polished. —A master piece work. —Taken by Selim Hassan as a canopic jar H. 26
65 pl. XV	New year flask	1932—1933 No. 735	In the debris of Sekhem—Ka-Re <sup>c</sup> tomb chapel	JE. 72307	13032	U. 49 s Case M	Exc. at Giza IV p. 120 (1) & p. 121 fig. 5	—Green faience —Late period —Inscription: a good wish for the new year.	—In a good state —A vase with a short narrow neck in the form of a Lotus flower ( <sup>52a</sup> ) decorated with an wsh collar on both sides. Handles in the form of a baboon, ( <sup>52b</sup> ) beneath each a vertical line of inscriptions. H. 14.5.

## Cont. (II)

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
66	Wavy lip bowl	1933—1934 No. 1092	Beside a skeleton head in a burial near the tomb of Ankh-t-ef	JE. 72315	16054	G. corr. 32	Exc. at Giza V p.318(No. 42), pl.LX-XVI, A	—Red pottery	—Good state of preservation. —Wide mouth, short height round base. —For liquids Dia. 21.7 Th., 4
67	Bread pot	1935—1936 No. VII, 1674	From the debris south of the mastaba of Yun-Min.	JE. 72317	16006	G. corr. 32	Exc. at Giza VII p.120 (No. 58).pl. XLVIIIc (No. 6) (cf. Exc. at Giza VI/II p.32 (No. 3)	—Half baked pottery —O.K.	—In good state of preservation. —a deep bowl with convex sides and narrow base. —Slight defect in rim. —Rough work H. 18
68	Reddish brown vase with pointed base	1936—1937 -1938 No. 2014	South of the valley temple of Khaf <sup>c</sup> in the mud deposits filling the mud-brick room.	JE. 72318	16011	G. corr. 32	Exc. at Giza IX, p.81(10), pl.XXXVI A (No. 1) & VI/II p. 34 (No. 2)	—Pottery (red brown) —O.K.	—Good state of preservation —Oval shape tapering to a pointed base. —perhaps for wine H. 21,5 ; rim 5



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
69 pl. XVI	Vase	1933—1934 No. IV, 850	Chamber in the west of the temple of Khent-Kau, s.	JE.72314	15998	G. corr. 32	Exc. at Giza IV, p. 45 No. 53 (?)	—Polished red pottery —O.K.	—Damaged at neck —Fine work —Oval body tapering to a pointed base. long neck. H. 20.
70	Spouted big pottery	1932—1933 No. IV, 844	Inside the Khent-Kau, s house ruins	JE.72320	16074	G. corr. 32	Exc. at Giza IV, p. 42, 44 No. 22 & pl. XVII c.	—polished red pottery —O.K.	—Good state of preservation, only with defects in neck & rim —Wide mouth, straight neck, flat base, rolled rim. H. 18.5 Dia. 10
71 pl. XVII	Small vase with two useless handles		Giza	JE.72321	16088	G. corr. 32	unpublished	—Red polished pottery with traces of black colour	—Good state of preservation —Fine work —Squat-shouldered jar with useless handles. —Rare shape dia. 15, rim 7.5; th. 3.5

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
72	His vase	1932—1933 No. 776	In the debris filling the burial chamber and the descending passage of Ni-ankh-Re	JE.72369	867	U. 32 T	Exc. at Giza IV, p. 157/3 a, pL. XLV, b & fig. 111 cf ibid, VI/II p. 28 (No. 7)	—Copper. —O.K.	—In a good state except spout tip is missing and damage in mouth. H. 19.5
73	Bell mouthed vessel	1932—1935 No. 838	In the debris east of mastaba of Ima-Neit north of shaft 720	JE. 72370	1696	U. 42 A right <sup>a</sup>	Exc. at Giza IV p. 203(1) pl. LVII b.	—Copper —L.O.K.	—In an imperfect state (all corrosion); cleaned lastly in 1975. —Wide fluted mouth. —blunt pointed base H. 22.5 Diam. 16



## III : MISCELLANEOUS OBJECTS.

These consist, of a set of 14 items :

Two of which are royal objects (Nos. 83 and 85), one (No 77) records a historical incident, the others are concerned with burial customs and the needs of the deceased there.

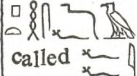
Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
74 pl. XVIII	A stela used as panel with a figure of Re <sup>c</sup> -wr standing	1929—1930	Tomb of Re <sup>c</sup> -wr - In situ at the back of the niche in a chamber brick-built forming the panel of the middle (southern) false door.	JE.66626 G. 6267	14580	G. 48 E	Exc. at Giza I, p. 24-26 and pl. XXVIII Exc. at Giza V, p. 144 (abnormal panels) Lange & Hirmer 1967 p. 61, pl. 50  Egyptian Museum, 1970, p. 58  Porter & Moss III/1, p. 267 (22).	—Alabsater —Vth dyn. —Re <sup>c</sup> wer name and 4 of his titles 1) sm 2) Hry-hp 3) hry sît3 mdw 4) Ht-Min	—Perfect state of preservation with traces of colouring.  —Considered as masterpiece (Exhibited in the 5000 years exhibition). (53).  —Represent Re <sup>c</sup> -wr standing in the usual attitude, (°) indicated by chiselled contours.  —Dressed in a short kilt with triangular apron, a broad band of cloth covering his left shoulder passing round the chest under the right arm pit.

## Cont. (III)

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
74 (Cont.)									—Arms following body with hands open, palms down —Wearing a broad fine necklace. —Using a long lined wig and short false beard. —One line of horizontal inscriptions above Re <sup>c</sup> -wr. H. 85
75 pl. XIX	Composite offering table of Mr. sw- <sup>c</sup> nh.	1929—1930	In front of the false door in Mersu- <sup>c</sup> nhk tomb on the floor of the chamber	JE.66627 CG 57027	14579	G. 47 S. 6	Partly published in Selim Hassan, Exc. at Giza I, p. 10, & p. 111 No. 4 pl. LXIX No 2 and V, p. 188. A complete photo in Ibid. I. pl. LXVIII	—Limestone; alabaster —O.K. —Name and titles. pr-hrw formula for the feasts.	—In a good state of preservation. Only the rim of one of the basins is chipped.  —Finely cut but the back and sides of the base were left roughly dressed.  —A rare example that gathers between two offering tables : practical one in big size (110x 45x 19.5) and model one to fulfil magically the purpose of the big one.



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
75 (cont.)							—O.K. Mon. 57027		<p>—A circular disk of alabaster embedded in the base nearly middling the table; inscribed in black writing going around recording Mrs<sup>w</sup>-nh titles and the Pr-hrw formula for the feasts.</p> <p>—To the left a rectangular basin narrowing from top to bottom; a circular depression with a raised rim and another smaller rectangular basin with chipped rim.</p> <p>—To the right another circular depression with raised rim</p> <p>—The model offering table (22×11×5) consists of a rectangular basin with levelled sides, circular table in relief, and two small circular basins sunk in the the slab with raised rims. Three lines of inscriptions giving Mrs<sup>w</sup>-nh titles are inscribed between these items.</p>


Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
76	<p>A decorated inscribed sarcophagus with lid of</p>  <p>called</p>	1929—1930	In the shaft of Fefi	JE.66681	14696	G. 47 Centre S.8	Exc. at Giza I, p.100-101 pl. LXI-LXV, (cf. p. 9 & fig. 170); <i>ibid</i> V, p.61-62; Roveri, p. 128 (B 47)+ Tav. XXV; Sethe, <i>Urk. I</i> 228 [5 (145), DJ]	<p>—Limestone</p> <p>—O.K.(V)</p> <p>—Htp di nsw formula as well as the names and titles of the deceased.</p>	<p>—Good state of preservation.</p> <p>—Found filled with debris. At its top is a decomposed skeleton representing a later burial, i.e. not the original one.</p> <p>—Carved from a single block</p> <p>—Lid found lying right to the sarcophagus. Underside is slightly concaved.</p> <p>—Sarcophagus decorated with the usual palace façade decoration (54) with noted care for the details that present the hoops, cords...etc. the cornice is rendered full through lid.</p>



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
76 (Cont.)									<p>—Both long sides bear the representation of two doorways, one only on each of the short sides.</p> <p>—At both ends of the long sides is a vertical inscription in relief, giving the Htp-di-nsw formula, titles and name. depth 52 196 × 88,5 × 76.</p>
77	The famous stela of the famous incident of Re <sup>c</sup> .wr. ( <sup>55</sup> )	1929—1930	tomb of Re <sup>c</sup> .wr in serdab No. 12 behind the southern wall	JE. 66682	1478	G. 46 N. 3	Exc. at Giza I, p.18-19, pl.XVII and fig.13; CdE, 12,1931p.272 Cf. Smith 1949, p.51, 1962, p.42	—Limestone. —O.K. Vth Dyns.	<p>—Good state of preservation</p> <p>—Inscriptions in one horizontal line and ten vertical in relief. (<sup>56</sup>) H. 78 ; 1.125 ; thickness, 7</p>
78	False door of Wḥa	1933—1934 No. 1109	In the filling, of shaft No. 973	JE.72253	15316	G.37.W 2 (unexhibited)	Exc. at Giza V, p.142,255-256 fig. 114 (p.255) & pl.	—Limestone —O.K. VIth Dyns. —Htp-di-nsw	<p>—Discovered in fragments</p> <p>—Now restored but not in a good state.</p>

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
78 (Cont)							<p>XXXbis (<sup>57</sup>) (cf. ibid p.149(9), 254 &amp; fig. 121</p>	<p>invocation</p> <p>2) titles of the deceased.</p> <p>3) Gods by whom the deceased is glorified</p>	<p>—Restoration shows three fragments stuck together that gives us an unusual false door, consisting of a plain slab of stone on which the architectural features could be traced through the incised inscriptions as follows :</p> <p>—One horizontal line indicating the cornice band (hṭp di nsw invocation, claimed also from Osiris).</p> <p>—Another horizontal line indicating the upper lintel (hṭp di nsw invocation, claimed also from Anubis).</p> <p>—A vertical band of red colour alluding to the central door-niche.</p>



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
78 (Cont.)									<p>— 4 lines in vertical inscriptions from right to left and others from left to right indicating the outer and inner jambs. And recording the titles of the deceased who is honoured by his lord, by the great god, by Osiris &amp; by Ptah-Seker</p> <p>— Wha is represented twice: one sitting alluding to the panel, and the other standing holding a long staff and facing inwards towards the door at the end of the left inner jamb. H. max. 124.</p>
79	Stela used as offering list	1934—1935 No. VII. 1544.	Tomb of  shaft 4062	JE. 72254	15415	G. 37 cage E	Exc. at Giza VI/II pl. XXXIII-XL (44) and p. 125 (No. 44)	—Limestone —O.K. (IV)	— Broken at its upper right side

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
79 (Cont.)								—Inscribed with 93 kinds of offerings	— It contains ninety three entries. H. 43.5 L. 79.3
80	Model rectangular slab for the sacred oils.	1931—1932 No. 897	Eastern wall of the burial chamber of Ankh-f on a platform at a height of 60 cm. from the floor.	JE. 72303	476	U. 32 Centre NE	Exc. at Giza III p. 140/3a, pl. XLVII/3, cf. ibid VI/II p. 45	Alabaster —O.K. (VI)  —Incised with black inscription given the names of the seven sacred oils	<p>— Good state of preservation.</p> <p>— Incised, vertically with black inscriptions given the names of the seven sacred oils.</p> <p>— Under each name a shallow circular depression for the oil. L. 15. l.r. 9.</p>
81	Headrest with two columns	1930—1931 No. 304	Mastaba of Ni-sw. kd-burial shaft 366 <sup>ss</sup> at the head of an adult skeleton.	JE. 72304	575	U. 32 W. 5 Case L	Exc. at Giza II, p. 103, pl. XXXII, 2 & 3	—Limestone —O.K.	<p>— Good state of preservation.</p> <p>— Rectangular base with abacus and curve supported by two columns in a single block.</p>



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
81 (Cont.)									—Somewhat rough in workmanship —The columns are pseudo separated, each with a circular base. H. 23.4, W. 19.2
82	Model boat pierced with holes	1937—1939 No 2015	In the mud-deposits filling the mudbrick room south of H <sup>c</sup> . f -Re <sup>c</sup> valley-temple.	JE.72322	960	U. 32 S.2. Case E bas 3	Exc. at Giza IX, p. 81 pl. XXXIII A	—Rough light red pottery —O.K.	—In a good state of preservation —roughly done —As a mean of transport in the service of the deceased ( <sup>59</sup> ). L. 26 Br. 15 H. 5
83	Part of a model mace head	1938—1939 No. 2091	In the debris of Cheops funerary temple	JE.72362	1632	U. 32 corr. case U.	Excavation at Giza X, p. 38, pl. XC.	—Hard limestone —O.K. (IV) —One of Khufu's names.	—A fragment finely done. —Inscribed with a cartouche representing Khufu's Horus name and a part of another cartouche ought to contain the name Khufu. H. 4.5

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
84	Set of 89 model tools and vessels	1931—1932 No. 688	Shaft 559, <sup>60</sup> north of that of Prince Kai on the left hand side of a boy( <sup>61</sup> )skeleton laid in a wooden coffin.	JE.72368	866	U. 32.T.	Exc. at Giza III, p. 240, 242 pl. LXVII & fig. 217. ibid VI/II p. 16, cf. p. 40, 41, 42, 43, 44.	—Copper —O.K. (?)	— Good state of preservation with certain defects in some of the pieces. — For different daily and liturgical uses of the deceased in the other world consisting of : — Two basins and two ewers for washing. — Two shallow dishes for gcese. — Two bowls moderately deep for fruit, grain etc. — A small squat jar for ointment. — Two shells to contain colours or kohl. — Two 'h i dishes



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
84 (Cont.)									<ul style="list-style-type: none"> <li>— Eight axe blades in two sizes; three in perfect state.</li> <li>— Four rectangular knives.</li> <li>— Four dagger blades.</li> <li>— 19 needles.</li> <li>— Seven bladed knives with a targ.</li> <li>— 20 chisels in different types</li> <li>— 7 necked adzes.</li> <li>— 7 plain adze-blades</li> <li>— Re-cleaned in 1974 by the Museum's laboratory.</li> </ul>
85	Brick stamped with the name of Thoutmoses IV	1936—1937	From walls built probably to hold back the sands around the sphinx.	JE.72371	11790	U.. 49s A 4 bas	Exc. at Giza VIII, p. 7, fig. 4, cf. ibid, p. 6	—Mud —N.K. (18th dyn).	<ul style="list-style-type: none"> <li>— In good state of preservation.</li> </ul>

Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
85 (Cont.)								—Prenomen of Thotmoses IV.	<ul style="list-style-type: none"> <li>— Inscribed with the cartouche of Thoutmoses IV.</li> <li>— Used as deposits L. 35,2.</li> </ul>
86 pl. XX	Slab with relief being right inner jamb of a false door.	Unknown	Unknown cf. Porter & Moss pl. III/1, p.293 various-4.	JE.87824	15040 E.	G 31 E. 7	Unpublished	—Limestone —O.K. —the names of the figures	<ul style="list-style-type: none"> <li>—Damaged in several places.</li> <li>—Clearly seen in relief : A beautiful lady with long wig standing in the conventional attitude, with right hand raised to her breast. Left hand along her side, palm down. In front of her a daughter in the same representation with short hair.</li> <li>—Beneath, two sons in the attitude of walking.</li> <li>—She is dressed in a tight fitting long dress with straps passing from breast over each shoulder. H. 89; Br. 19</li> </ul>



Ser. No.	Object	Season of excavation and number	Provenance	Museum Numbers	Inventory Number	Position	Main references	Material Date Inscription	Observations
87	Two censers	1935-1936 No. 1671 (A-B)	In the debris fronting the rock hewn tomb south of the tomb of Debien	JE 87827	868	U. 32E Centre Case T	Exc. at Giza VII p. 121 No. 70 (A,B.) pl. L (A, b)	—Rough reddish pottery	—Good state of preservation —roughly done —Traces of smoke blackened are noticed on the inside referring to being in actual use. H. 15.5 & 16.

## ABBREVIATIONS

The abbreviations used for periodicals, are the conventional ones. See Catalogue de la Bibliothèque du Musée Égyptien du Caire 1927-1958 or Janssen bibliography. Others stand as follows :

- Bonnet, Tracht = Hans Bonnet, Die Ägyptische Tracht bis zum Ende des Neuen Reiches (= Untersuchungen zur Geschichte und Altertums-kunde Ägyptens VII).—Leipzig, 1917.
- Breasted = James Henry Breasted, - Jr - Egyptian Servant Statues. The Bollingen Series XIII. — Washington, 1948.
- CG. = Catalogue général.
- Drioton & Sved = É. Drioton & É. Sved.—Art Égyptien. Texte d'Étienne Drioton, photographies d'Étienne Sved. — Paris, 1950.
- EM, 1963 = P.P. Riestrer, Egyptian Museum : Cairo I. Bern-Cairo, 1963.
- Em, 1970 = Sergio Donadoni. Egyptian Museum Cairo. Texts by S. Donadoni; design by E. Giorgi.—(Great Museum of the World)—London-Verona, 1970.
- Exc. at Giza ; See note No. 2.
- G. In Museum numbers it refers to Guide number ; in position, it refers to ground floor.
- Hornemann = Bodil Hornemann, Types of ancient Egyptian statuary I-VII — Copenhagen, 1951 — 1969.
- JE. = Journal d'entrée.
- Kees 1955 = H. Kees, Das alte Ägypten.—Berlin, 1955.  
1961 = Ancient Egypt. A cultural topography — London, 1961.
- Keimer, Cahier 5 = Louis Keimer, Interprétation de quelques passages d'Horapollon. SASAE, Cahier No. 5 — Le Caire, 1947.



- Kielland, Geometry = E. Christie Kielland, *Geometry in Egyptian art.* — London, 1955.
- Lange & Hirmer 1967 = Kurt Lange & Max Hirmer, *Ägypten, Architektur, Plastik, Malerei in drei Jahrtausenden mit Beiträgen von E. Otto und Ch. Desroches - Noblecourt. Aufnahmen von M. Hirmer.* — München, 1976.
- LOK = Late Old Kingdom
- Meir IV = A.M. Blackman, *The rock tombs of Meir IV. The tomb-chapel of Pepi 'onkh the middle son of Sakhhotbe and Pekkernesfert* (D. No. 2). — London, 1924.
- Montet, Lives = Montet, *Lives of the Pharaohs.* — London, 1968.
- O.K. Mon. = Dia' Abou Ghazi, *Old Kingdom Monuments III/2 = Offering-tables, alters and basins.* — Cairo, 1976 — In press.
- Porter & Moss = B. Porter & R. Moss, *Topographical Bibliography of Ancient Egyptian hieroglyphic texts, reliefs and paintings, III, part 1* (2<sup>nd</sup> edition), Oxford, 1974.
- Roveri = A.M.D. Roveri, *I Sarcophagi egizi dalle origini alla fine d'l'antico regno.* — Roma 1969.
- Smith, 1949 = William Stevenson Smith, *A history of Egyptian Sculpture and Painting in the Old Kingdom.* — 2nd edition. Oxford, 1949.
- Smith, 1962 = W.S. Smith, *The Old Kingdom in Egypt and the beginning of the First Intermediate Period.* Cambridge Ancient History revised edition, vol. I, Chapt. XIV. — Cambridge, 1962.
- TH. = Terre des hommes — Exposition Internationale des Beaux-arts — Montreal, Canada, 28 Avril - 27 Octobre 1967.
- TTE = Temples et trésors de l'Égypte. Préface et notes de légendes par É. Drioton, photographies d'Hassia. — Paris, 1954 = *Art et Style* 31.

- Ucko = Peter J. Ucko, *Anthropomorphic Figurines of predynastic Egypt and Neolithic Crete with comparative material from the prehistoric Near East and mainland Greece.* — London, 1968.
- Vandier, Manuel III = Jacques Vandier, *Manuel d'Archéologie Égyptienne III : Les grandes époques — La statuaire, 2 vols.* — Paris, 1958.
- Vigneau & Drioton = É. Drioton and A. Vigneau, *Musée Égyptien, Le Musée du Caire. Encyclopedie photographique de l'art, photographies inédites d'André Vigneau, Préface et notices par E. Drioton.* — Paris, 1949.
- Wenig = S. Wenig *Die Frau in alten Ägypten.* — Wien — München, 1969.



## NOTES

1. See ASAE, LVIII, p. 67-83.
2. *ibid.*, Nos. 7, 9, 19, 20, 22, 24, 28, 34, 37, 38, 47, 48 (cf. Nos. 4, 6, 8, 10, 13-14).
3. Entry date is 1936 for the numbers beginning with 666...; 1940 for those beginning with 72; 1946 for the ones beginning with 87...
4. Nos. 1-3 & 83-85.
5. All the other objects.
6. Its main features are: Left foot forward, arms hanging by sides, hands clenched upon something, thumbs up (Nos. 12, 13, 15, 18-21, 23, 39, 41, 42, 43) Nos. 22, 40, 44 exceptionally represented with feet level.
7. Vandier (J.), *Manuel d'Archéologie*, III, p. 63/4 (II-B-b). In the same attitude statue No. 5.
8. Although the bracelets were well known it is represented rarely in this set. (Statues Nos 4, 9, 10, 43, 45 (females), 14 (male) cf. Vandier, *ibid.*, p. 115; Aldred, *Jewels of the Pharaohs*, 159.
9. The Egyptians cared greatly for their nails, both males and females.
10. Its main features are: feet level, arms hanging down by sides, hands open, palms down. (Statues No 6, 7, 8, 9, 10, 43): Level feet is represented in this set in male statues (Nos., 22, 40, 44).
11. Its main features are: sitting on block or chair, arms following body and thighs, hands open, palms down.
12. Usual colours are: Dark brown for the body, white for the kilt; black for the hair, lashes and eyebrows, as well as the nipples.
13. Main features are sitting on a chair or a stool, feet level, arms following body and thighs, hands differ; here left hand open with palm down, right hand clenched upon something, and resting on the thigh vertically: In the same attitude Nos. 14, 24, 26, 27, 28. Right hand in No. 29 is missing.
14. The simple kilt is the one without folds. The ceremonial one is that with folds. see Bonnet, *Tracht*, pl. VI, No. 39, for the belt cf. *ibid.* Nos. 37, 38. cf. also Vandier, *Manuel III*, p. 108-109 & fig. 10/6 (p. 107).
15. Vandier, *ibid.*, p. 110.
16. Short wigs cover the ears.
17. The way of rendering the features is unusual, eyes reaching the back sides of the face. Ears nearly to the back.

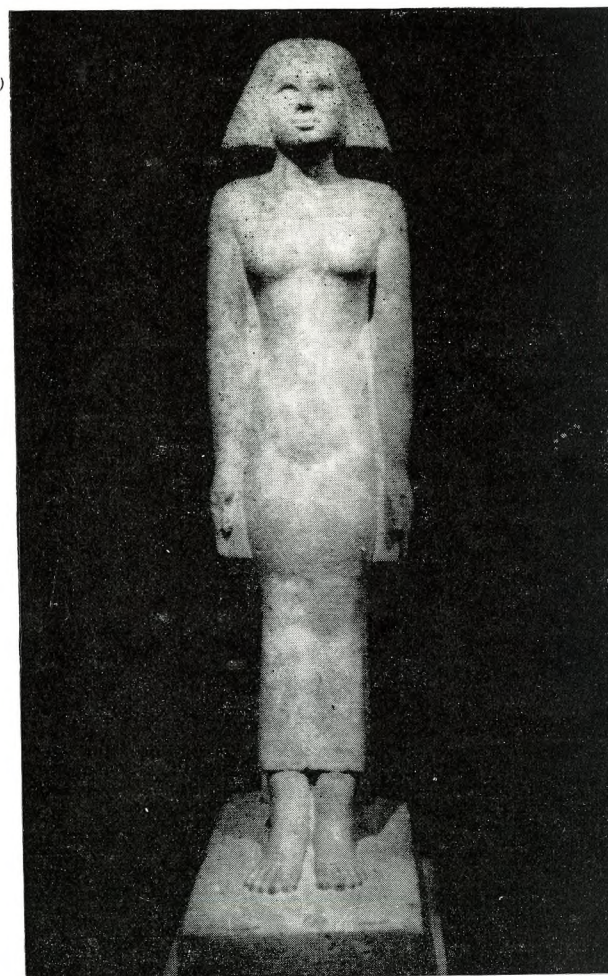
18. Although it goes with the main features of a sitting man, but the legs are splayed apart, feature of few sculptures of the intermediate period.
19. The long wig reaches till the shoulders.
20. For the Old Kingdom common collar for both male and female see Vandier, *op.cit.*, p. 112, fig. 11/164 & 166; Aldred, *op. cit.*, pp. 144.
21. But here the right hand is clenched horizontally on a longer object (cf. Vandier, *Manuel*, III. V/XXIV); left hand opened with palm down. See also note 25.
22. cf. Selim Hassan, *Exc. at Giza*, VII, p. 101 (fig. 96).
23. Vandier in his *manuel III*, p. 85-88 (cf. also, p. 131-133), treated different opinions concerning such representations and believed that such doubling makes the statue more supportable. I think that such representations give us some phases of the person through life. I will treat this in a separate article.
24. Selim Hassan thinks that they represent different stages of age: the right one, youth, the middle one, full age, the left one, old age.
25. Right hands are resting on the thighs horizontally holding handkerchiefs. Left hands open with palm down.
26. See Vandier, *op. cit.*, p. 111.
27. Contradictory to Breasted (J.-Jr.), *Egypt. Servant statues*, p. 1, I think that this statue was entitled for the service of the deceased. He is represented in the state of reading the needed rituals.
28. Nude figures are considered mainly as concubines, as, it was not the habit to represent ladies nude. Cf. Breasted, *op. cit.*, p. 93 & Selim Hassan, *Exc. at Giza*, V, p. 200., also II, pp. 206.
29. Cf. Breasted, *ibid.*, Ch. II; Vandier, *op. cit.*, p. 92-99.
30. For location of such statues and material, see Breasted, *op. cit.*, p. 3.
31. Cf. Vandier, *op. cit.*, p. 69-70; Selim Hassan, *op. cit.*, VI/3, p. 27.
32. Cf. Breasted, *op. cit.*, Ch. II, II/I (p. 30).
33. This is one of nine servant statues found in the same serdab. For a photo for all of them together, on discovery, see *Excavations at Giza*, V, pl. X (A) & VI/III, pl. LXXIII B.C.; after cleaning see *ibid.* V. pl. X (B). These statues (4 females and 5 males) carry in this article Nos 48-50, 55, 57-61. Every one has a different task through which the deceased could acquire all his main daily needs.



34. Breasted, op. cit. Ch. II, II/3, p. 32 (& cf. p. 33).
35. Breasted, *ibid.* I/2, p. 17.
36. Considered by Breasted as unusual representation (cf. *ibid.* pl. 17A). Nos 51 & 54 in this set are with the same representation. cf. also No 57.
37. Cf. Breasted, op. cit. Chap. II, I/5, p. 25 & I/7, p. 27.
38. For the first one see No 51.
39. It is registered without identifying the sex, and suggested by Selim Hassan to be a woman. But the skin yellow colour and the breast indicate a woman definitely, as well as the name : cf. Breasted op. cit. II, I/5 (p. 25).
40. cf. Breasted, op. cit. ch. III, 1/2 (p. 49) & pl. 45 b.
41. Such a practice is witnessed by Selim Hassan among Egyptian Fellahin. see op. cit. VI/3, p. 181. Supports him the ancient Egyptian literature cf. H. Brunner, *Die Lehre des Cheti* 8 (12-3); A. Erman, *The anc. Egyptians*, p. 70. But cannot the name of the servant as the "one who makes dough" denotes his work?
42. cf. Ranke (H.), *Personennamen*, p. 231/8.
43. Note that the legend of C is mentioned under D.
44. Breasted, op. cit. ch. II, V/5 (p. 46).
45. Breasted through parallel reliefs precised the cooked articles by bread for forcible feeding the fowl.
46. Breasted, op. cit. Ch. II, V/3, p. 44-45.
47. The legend of D. is written under C.
48. Breasted, op. cit. Ch. II, V/2, p. 42.
49. Cf., Breasted, op. cit. p. 42, type 2.
50. cf. e.g. CG. 1530, Meir IV, pl. IX register 3 (r). Dressing in such a similar manner is witnessed in figures representing herdsmen (JE. 40027) & servants carrying supplies for deceased (cf. Breasted, op. cit., pl. 50 c), or in figurines (cf. *ibid.* 49 c & Ucko (P.J.), *Anthropomorphic figurines* N° 11).
51. Cf. Breasted, op. cit. III, I/3, p. 50. Also probably baking, Selim Hassan, op. cit. II, p. 103, cf. Breasted, *ibid.* II, I/7 (p. 27); or cooking cf. Meir IV, pl. XIII.
- 52a. The Lotus refers here to the happiness connected with the new year wishes. See Keimer, *Cahier*, N° 5, p. 10.
- 52b. The baboon represents Thot, God of Years. See Keimer, *ibid.*, p. 8.

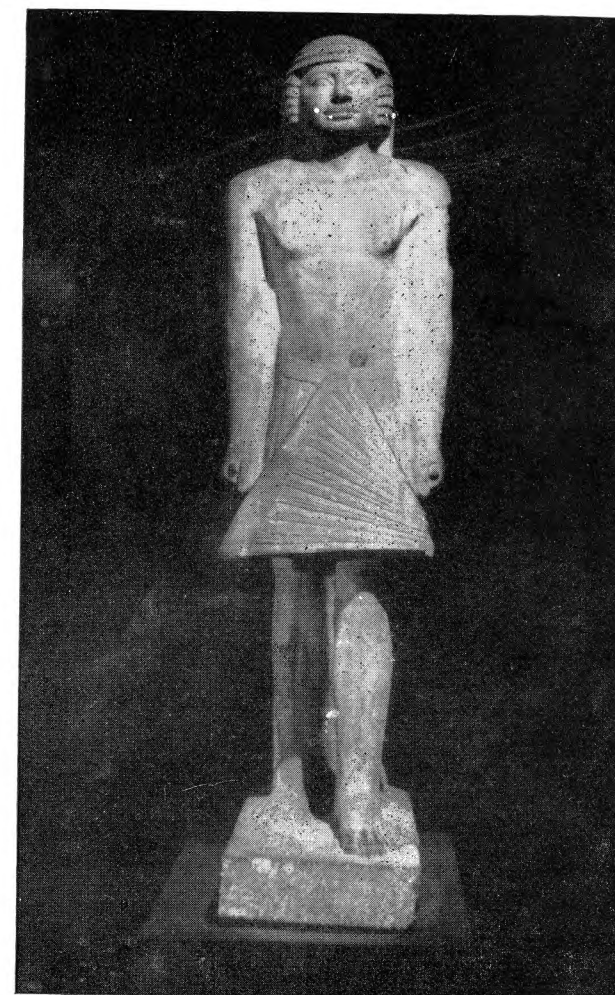
53. The 5000 years exhibition extended from 1960-1963 in various places : Brussels (Mars-Juin 1960) ; Amsterdam (16 Okt. - 31 Dec. 1960) ; Zürich (11 Febr.-16 April 1961); Essen (15 Mai-27 August 1961) ; Stockholm (16 Sept. - 19 Nov. 1961), Wien (15 Dez. - 15 Febr. 1962) ; Louisiana (1 April - 27 Mai 1962) ; London (22 June-August 1962), Kyoto (26 May - 21 July 1963). In the first eight places the following items - from this set - were exhibited : Nos. 30, 40, 45, 47, 74, In the last one only Nos. 30, 40, 45.
54. Cf. Selim Hassan, op. cit. V, p. 61.
55. This stela was erected by order of King Nfr - ir - k3 - Re<sup>c</sup> to record his respect and love to Re<sup>c</sup>-wr after seeming disgraced when the King's staff struck his leg, accidentally, while celebrating a court ceremony.
56. Free translation is given by Selim Hassan in *Excavations at Giza I*, p. 1 - 19 & *CdE*, 1931, p. 272.
57. It is lacking now a part from the bottom.
58. See Exc. - at Giza II, fig. 110 (p. 102).
59. Cf. Breasted, op. cit., pp. 75.
60. Cf. Selim Hassan, op. cit. III, fig. 214 (p. 240).
61. About 12 years old according to Dr. Derry. cf. *ibid.* p. 243.





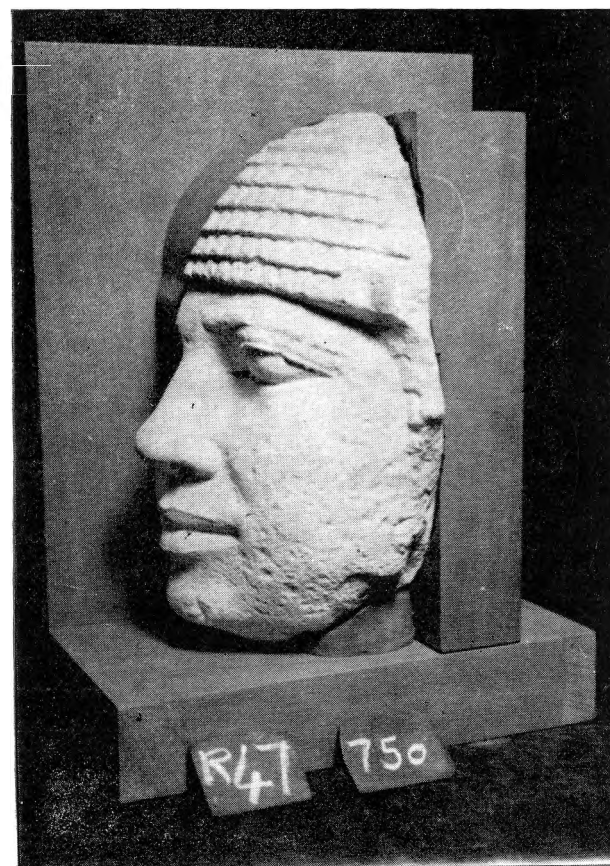
6—Mer.s-nḥ discovered second season





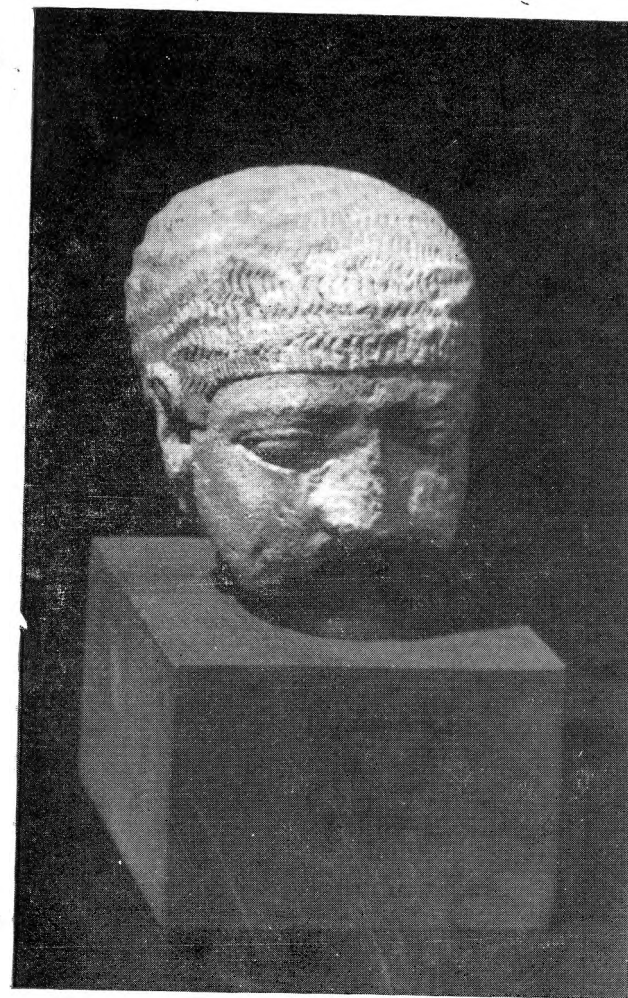
15—K3-dw3 discovered six season





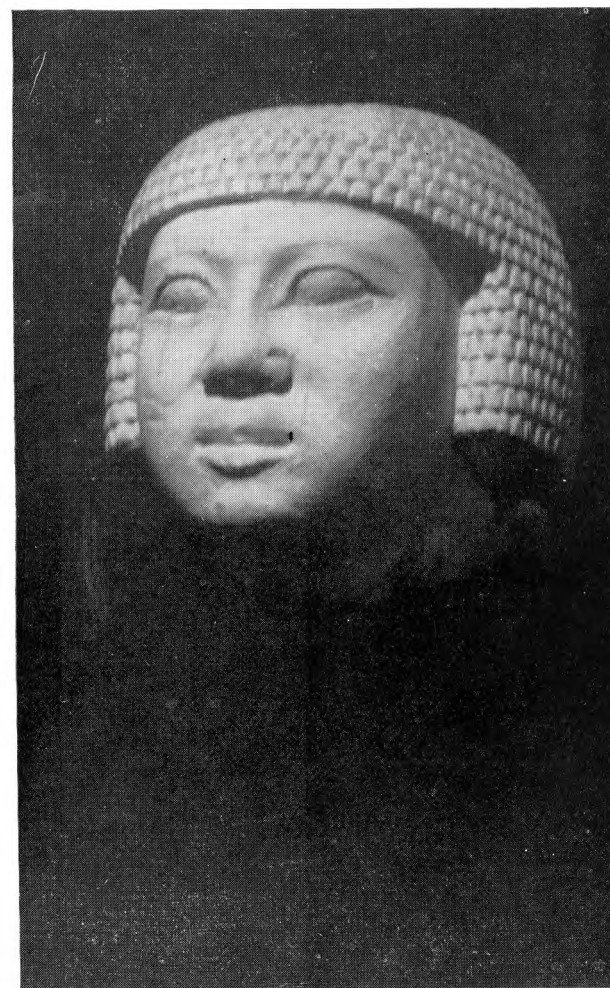
30—Part of a head discovered first season





33—Part of a statuette head discovered first season





34—Male head, discovered six season





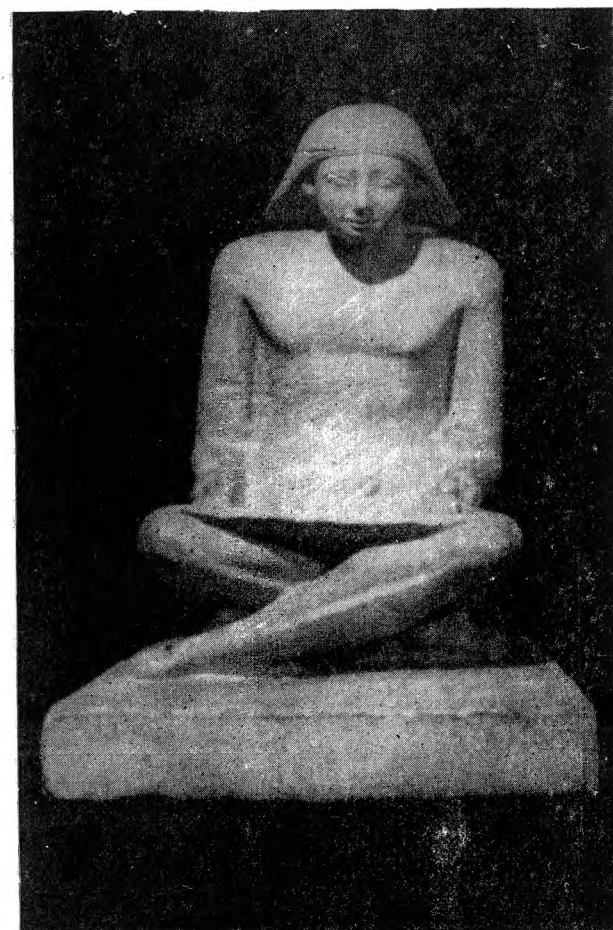
35—Head of a statue discovered third season





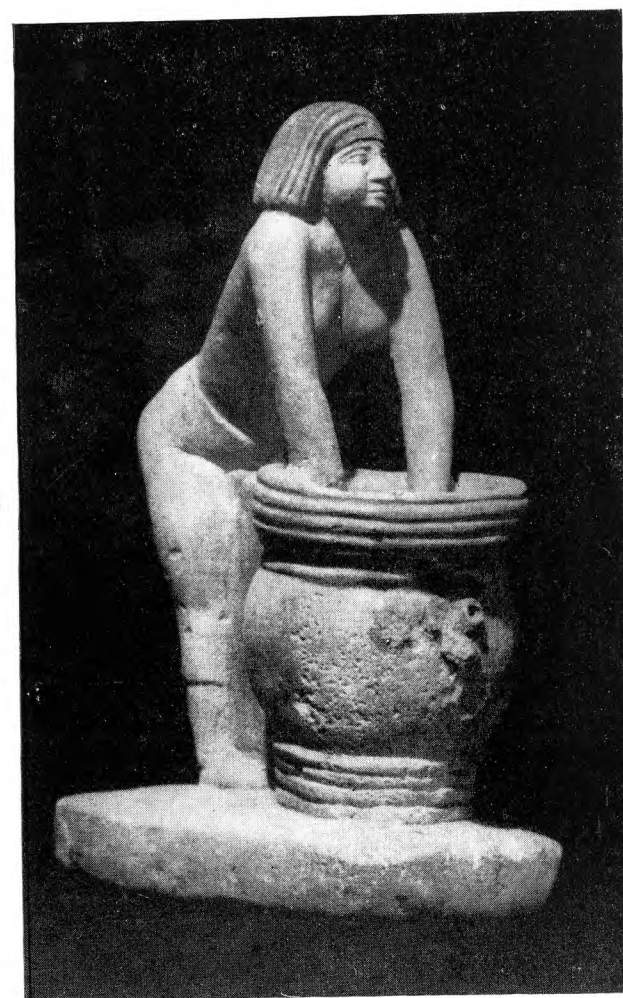
42—Mer. sw 'nh discovered first season





45—Reading scribe discovered six season





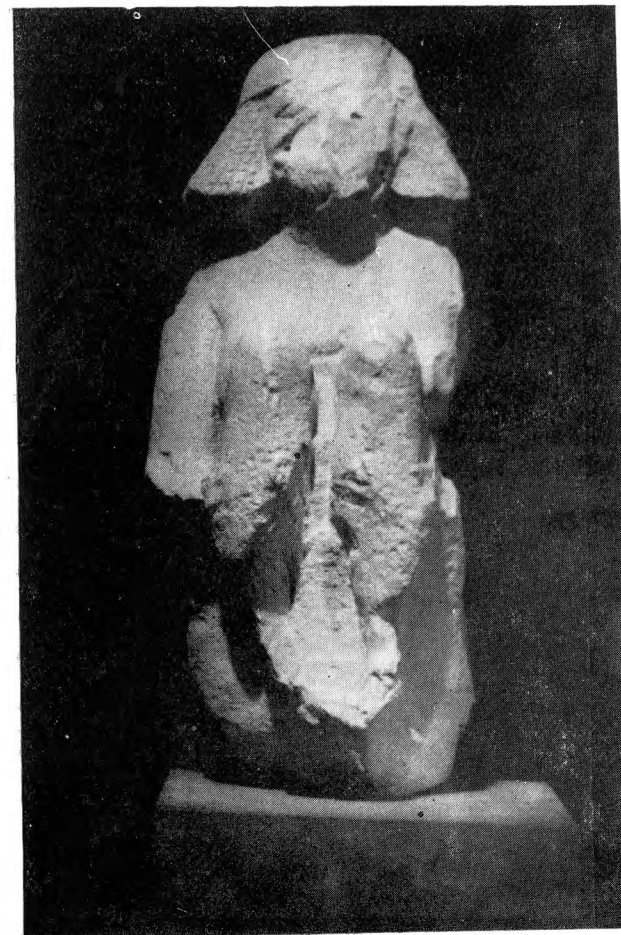
47—Breweress discovered first season





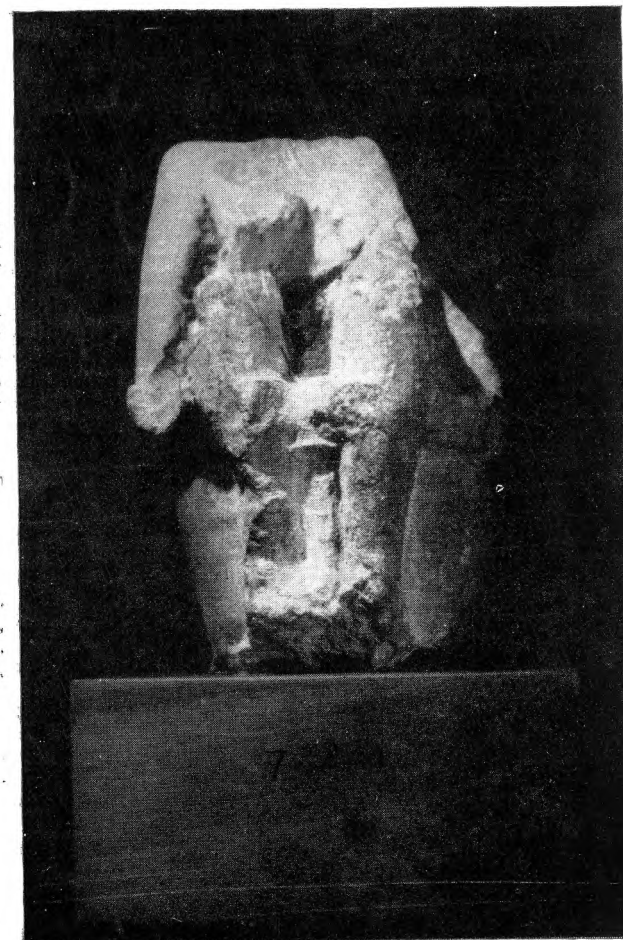
48—Squatting bakeress, six season.





52—Servant woman discovered second season





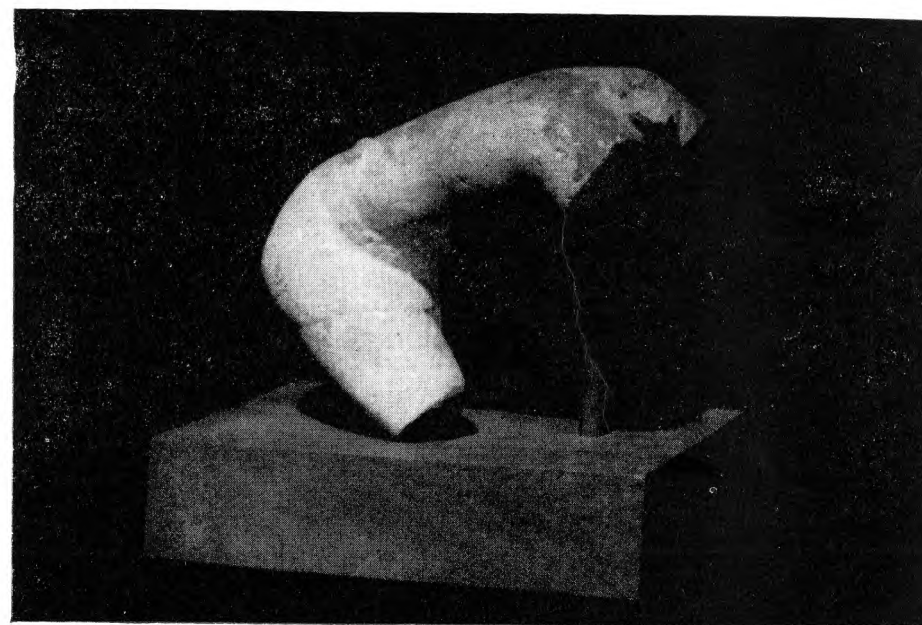
56—Bedouin servant discovered second season.





56 — Statuette from back.





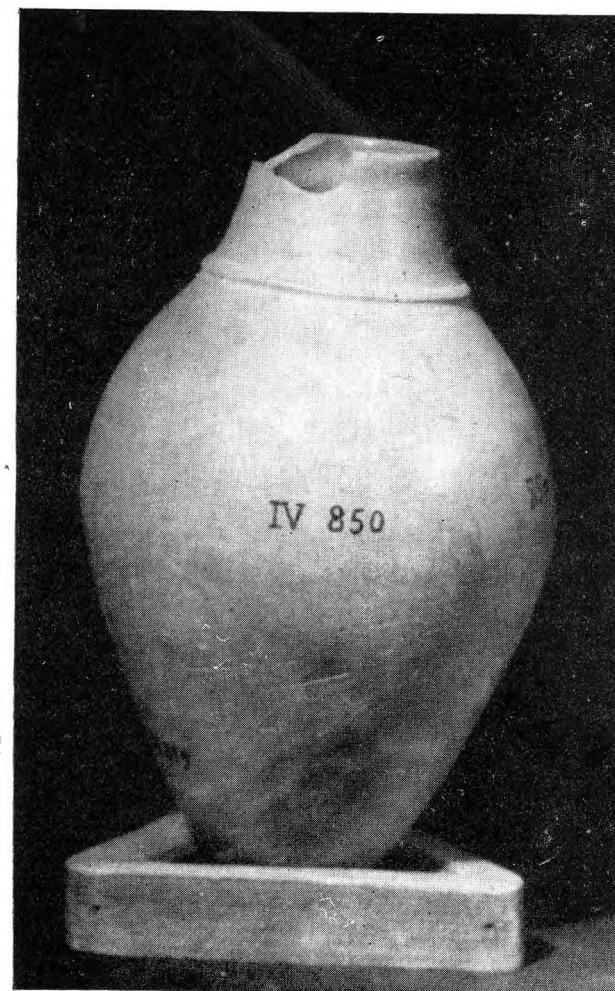
62—Part of a male servant discovered second season





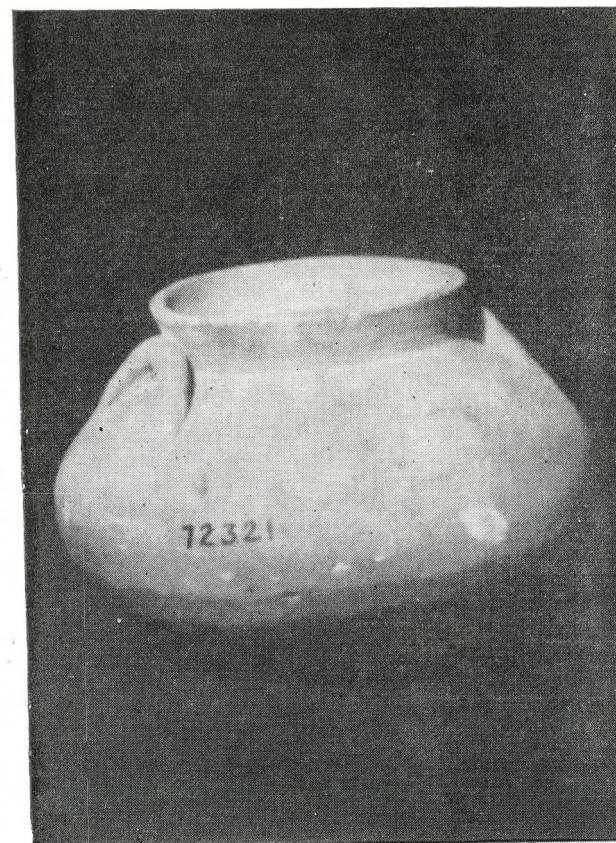
65—New Year flask discovered third season.





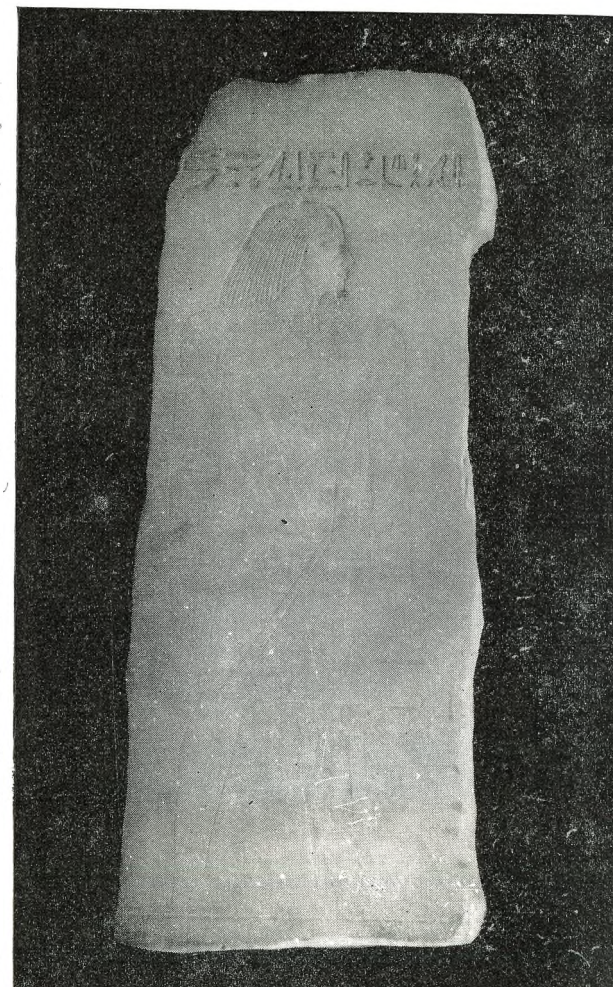
69—Fine pottery vase discovered fourth season





71—Red polished pottery vessel.





74—Re<sup>c</sup>-wr panel discovered first season





75—Mr-sw - 'nh composite offering table discovered first season.





86—Inner jamb of a false door.



## A SKULL WITH SILVER BRIDGE TO REPLACE A CENTRAL INCISOR

BY

ZAKY ISKANDER AND JAMES E. HARRIS

### Discovery of the Skull

Owing to the great expansion of the building industry in Egypt after the Second World War had come to an end in 1945, the Portland Cement Company at Tura El-Asmant decided to enlarge its plants to greatly increase production. The Company managed to build four new furnaces to the south of its main buildings at Tura El-Asmant. While digging in the chosen area preparing the foundations of the new furnaces, some ancient tombs were found. Accordingly, the authorities of the Company asked the Department of Antiquities in Cairo to carry out systematic excavations in this area to clear it completely of any tombs or artifacts which might have great archaeological value before starting to erect the furnaces.

The first season of work for excavating this site started on November 25, 1952 and ended on February 10, 1953. The work was headed by our late friend and colleague, Mr. Mohammed abd El-Tawab El-Hetta who was then an inspector of Antiquities and co-excavator with Zaky Youssef Saad at Helwan. Mr. El-Hetta was indeed a very clever excavator and scholar. He had particularly very keen observation, otherwise this tiny silver bridge would have easily escaped vision and we would have lost a very valuable information and an extremely important discovery. For his memory and honour we publish this article which we believe is very remarkable in the history of dentistry.

One hundred and eighty-two (182) tombs were found in that season, and were given serial numbers from T-1 to T-182; T meaning the first season of work at Tura El-Asmant. Iskander visited the site during the excavation work where he examined the burials and collected several samples.



The bodies were in almost all cases wrapped in several layers of linen bandages which were impregnated, or bonded together, with resin. Inside the bandages the bodies disintegrated almost completely into bones, and only tiny remains of the original body tissues could be detected.

The state of the bodies indicated that they might have been merely wrapped in linen bandages stuck together with molten resin without any mummification; or more probably they had been mummified according to the third or the cheapest method of mummification described by Herodotus (Book II, 88) : (1) The third method of embalming is the following, "which in the case of the poorer classes after clearing the abdomen with a purgative, they 'cure' the body for the seventy days and deliver it to be carried away." On the basis of the technical and archaeological evidence, almost all of these burials date back to the Late Periods of the Egyptian history and are most probably Ptolemaic.

In one of the burials (T-121) Mr. El-Hetta found an almost bare skeleton where he noticed that in the skull one of the teeth was fixed with some kind of wire. He delivered this skull (Plate 1) to the laboratory of the Department of Antiquities in Cairo in February, 1951 for conservation and scientific study.

#### Material of the Wire

The wire was at first cleaned mechanically with a tiny stiff brush and a little water, when it then appeared to be of corroded silver. After this preliminary cleaning, it looked dark grey, could be easily scratched with a steel knife and had the general appearance of horn silver (silver chloride). A small piece of its surface layer was removed and used for further identification by qualitative analysis.

This material could be dissolved to some extent in strong ammonium hydroxide solution giving a slightly bluish solution. When this solution was treated with the amount of hydrochloric solution just more than what was needed for neutralization, a white precipitate of silver chloride was formed. This test shows quite clearly

that the wire was composed mainly of silver which contained slight impurities of copper. The wire had suffered complete corrosion so that the silver changed to horn silver and the copper changed to copper compounds.

The wire was subjected to X-Ray Diffraction examination using a flat camera; no lines were recorded, showing that the wire in its present state contains no metal and that it was almost completely changed to the amorphous silver chloride.

#### How was the Wire Bridge Constructed

The splinted or replaced tooth here is the Right Central Incisor in the upper jaw (Plate II). This tooth was attached by passing the silver wire through two holes which had been previously drilled in the lower half of the crown and the two ends were tied tightly to the two incisors around it. It seems quite probable that the upper part of the loose incisor was fractured along the plane defined by the drilled holes.

The fact that holes were drilled through the Right Central Incisor would suggest strongly that even if this tooth were the patient's, the dental preparation was made outside of the mouth. The enamel of teeth represents the hardest known biologic material and it would have been virtually impossible to prepare holes in the crown, with the tooth in place, especially if it were loose. Further, if the tooth were alive and vital, there would have been little opportunity to avoid the pulp chamber with consequent destruction, pain and death of the living pulp.

The X-rays (Plate III) reveal that the root of the Right Central Incisor is considerably shorter than that of the left, there is no evidence of any periodontal structure (attachment of the root to the bone), and there is no indication of any radiolucent areas at the tip of the root, all of which indicated that the tooth was part of a true bridge. Further the recounting of the labial plate of the alveolus tends to support the contention that the Right Central Incisor was placed or replaced back in the upper jaw after healing of the oral-alveolar structures had occurred.



The labial protrusion of the lower right incisor appears to have been in a traumatic relationship to the Right Maxillary Incisor and indeed might have been responsible for a traumatic "bite" with consequent looseness or loss of vitality of this tooth which resulted in its replacement.

Unfortunately the detailed study of the New Kingdom Pharaohs or the Old Kingdom Nobles at Giza provide no insight into other dental restorations, but rather indicate a lack of any sort of dental care, i.e. restorative, periodontal or even surgical. On the other hand Fastlicht has documented the placement of intricate restorations of gold and precious stones in the teeth of the Mayan people, a relatively recent South American culture without the long medical and dental history of Ancient Egypt. The ability of the Egyptian to handle the precious metals necessary for dental work would suggest that here should be abundant examples of the type of bridge reviewed in this article.

#### Commentary

The attachment of the Tura El-Asmant tooth by means of a wire is the second case of its kind found in Ancient Egypt. The first case was found in a skull of the Fourth Dynasty discovered by Hermann Junker at Giza. In it a gold wire was used to join a badly worn lower third molar to the second. (2).

Silver was much rarer than gold in Egypt until about the Eighteenth Dynasty, when it began to be a little more plentiful, and it was not until much later that it became fairly common (3). In the Twenty-first and Twenty-second Dynasties, silver became so common that coffins, large libation vessels and canopic coffins could be made of it (4-5). In the Ptolemaic Period it was used on a large scale for making coins besides its use for making many other objects. Accordingly, silver was considered more expensive than gold until the end of the Middle Kingdom, as could be concluded from the Ancient Egyptian texts. During the New Kingdom the value of gold became almost twice that of silver, and a silver unit came into use as the standard of assessing values. (6).

The gradual increase of the use of silver in Ancient Egypt explains why a silver wire was used in the skull of Tura El-Asmant which dates back, most probably, to the Ptolemaic Period; instead of the gold wire which was used in the skull of Giza which dates back to the Fourth Dynasty. The traces of copper in the silver wire are most probably due to natural impurities, since copper was found in small proportions in many specimens of ancient Egyptian silver (5,7).

The Ancient Egyptians achieved a great progress in medicine. Their medical papyri indicate that they treated the different kinds of diseases. Herodotus (8) referred to the specialized nature of Egyptian medical practice. Thus he reported that, "The practice of medicine is divided into many branches, so that each physician treats one disease and no more. Therefore physicians abound, some for the eyes, some for the head, some for the teeth, some for the belly and some for obscure ailments".

Some of the physicians were specialized in dentistry. Of the list collected by Frans Jernkheere (9) of 82 physicians whose names were mentioned on the different objects or monuments in Ancient Egypt, six were dentists. Of these we may mention Hesy-Re (Plate IV) whose titles included "chief of the Dentists" and chief of physicians" and dates back to the Third Dynasty (about 2900 B.C.).

The Medical papyri papyrus Ebers; papyrus Hearst and papyrus Kahun include about sixteen prescriptions for the treatment of dental problems such as strengthening loose teeth and caries. Of these, seven prescriptions are concerned with preventing the loss of loose teeth by treating the gum and the loose tooth with certain preparations, e.g. papyrus Ebers 739, which states:

"The beginning of a prescription for the strengthening of a tooth: Powder of the seed grain of emmer 1; ochre 1; honey 1; to be mixed together and the tooth to be packed therewith"(10).



The ancient Egyptians tried, therefore, to prevent the loss of a loose tooth both surgically by fixing it to the teeth around it by means of gold or silver wires, and medically by applying certain medicaments around it or between it and the gum.

Zaky Iskander and James E. Harris

17-7-1972

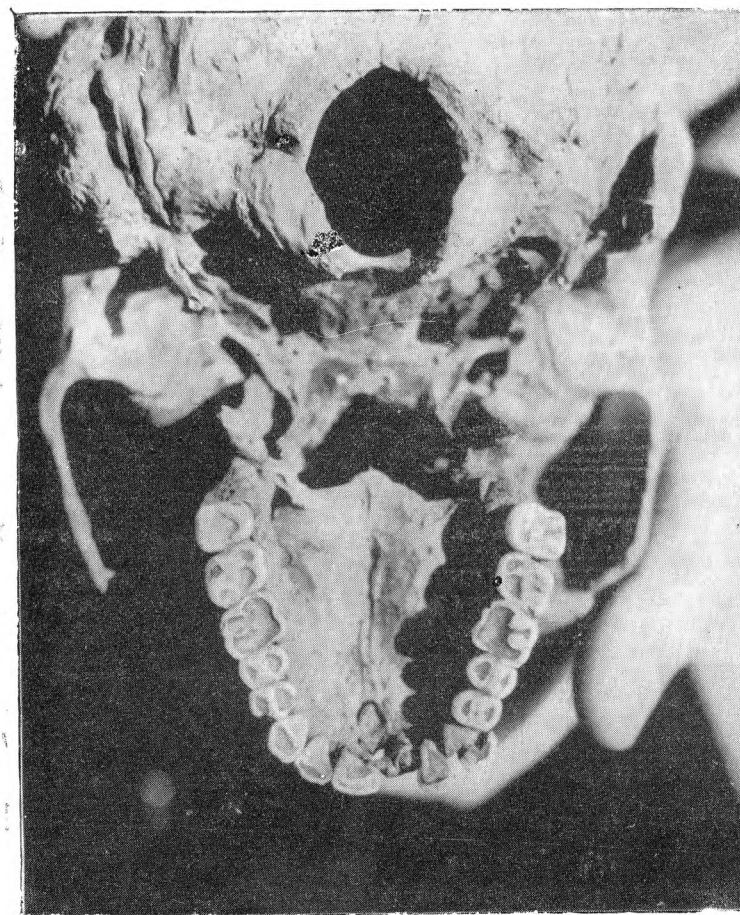
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The Bridge Skull





The Silver wire used for fixing the Right Central Incisor to the two incisors around it in the upper jaw.





X-Ray Photograph of the incisors and the silver bridge.





Wooden Panel, with design in relief, from the mastaba of Hesy-Re at Saqqara. His titles included "Chief of the Dentists" and "Chief of Physicians", Third Dynasty, Cairo Museum, Guide No. 88.



## DEVELOPMENT OF CAIRO CARBON - 14 DATING LABORATORY

BY

Dr. SHAWKI M. NAKHLA      Mme. FERIAL M. MOHAMMED

### INTRODUCTION

Carbon is one of the elements indispensable for life on the earth : during the process of photosynthesis, atmospheric carbon dioxide is assimilated by green plants giving birth to simple organic compounds which rapidly take part in the different biochemical processes.

Natural carbon consists mainly of three isotopes of mass numbers, 12, 13, and 14 respectively with natural abundance - C-13/C-12 = 1% and C-14/C-12 =  $10^{-10}$ %. From these isotopes only carbon-14 is radioactive with a half-life period\* of  $5730 \pm 40$  years (Godwin, 1962). However, a conventional value of  $5568 \pm 30$  years (Libby, 1955) is generally used in order to avoid confusion. The radioactive C-14 gives  $\beta^-$  radiation of low energy  $E_{\max} = 155$  KeV. This isotope is produced in the upper atmosphere by the interaction of secondary cosmic neutrons\*\* with atmospheric nitrogen following the equation :



These atoms of carbon-14 are soon oxidised to give radioactive carbon dioxide, which is mixed with normal carbon dioxide and distributed throughout the atmosphere by air currents. The total number of carbon-14 atoms present on the earth finally reaches a state of "secular equilibrium" at which the rate of formation is equal to the rate of disintegration.

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\* The half-life period of a given isotope is the period in which the quantity of this isotope is reduced by a factor of two

\*\* "Primary cosmic radiation consists mainly of high energy protons which by interaction with the earth's atmosphere give rise to secondary neutrons of thermal energy (energy of the order of some thousand electron volts),



Carbon is present on earth in two main reservoirs : the exchange reservoir and the sedimentary reservoir. The exchange reservoir through which carbon-14 is assumed to be found in a constant and uniform amount, consists of the following :

	gm of carbon/cm <sup>2</sup> of earth's surface
Ocean ; carbonate, bicarbonate	7.25
Ocean dissolved organic matter	0.59
Biosphere	0.33
Atmosphere	0.12
Total	8.3

The average neutron flux incident on the earth's surface has been estimated to be 2.4 cm<sup>-2</sup>/sec. (Landenberg, 1952) and more recently 2.5 cm<sup>-2</sup>/sec. (Lingenfilter, 1963). Therefore the number of disintegrations per minute per gram of carbon for the exchange reservoir should be

$$2.4 \times \frac{60}{8.3} = 17.2 \text{ d.p.m.}$$

which agrees closely with the observed rate of  $16.1 \pm 0.5$  d.p.m.

During the process of photosynthesis, carbon-14 is assimilated by green plants in the form of carbon dioxide in the same way as ordinary carbon where it finds its way to all living organisms as well as to ocean water. All living matter on earth is labelled in this way by radiocarbon atoms.

During life there exists a state of dynamic equilibrium i.e the disappearance of carbon-14 by the decay process is compensated by the continuous supply of contemporary carbon. When the supply stops by the death of the organism, the decay of carbon-14 is no longer compensated and when evaluated can be used as an indirect measure of the age of the material (Libby, 1955) which is in this case the time elapsed since death.

The time which has elapsed since death can be taken from fig 1 or calculated by using the radioactive decay equation :

$$N_T = N_0 e^{-\lambda T}$$

where :  $N_t$  = net activity of the sample

$N_0$  = net activity of the standard living matter

$\lambda$  = radioactive decay constant

$$= \frac{\ln 2}{5568}$$

$T$  = age of the sample

Activity  
dpm/g Carbon

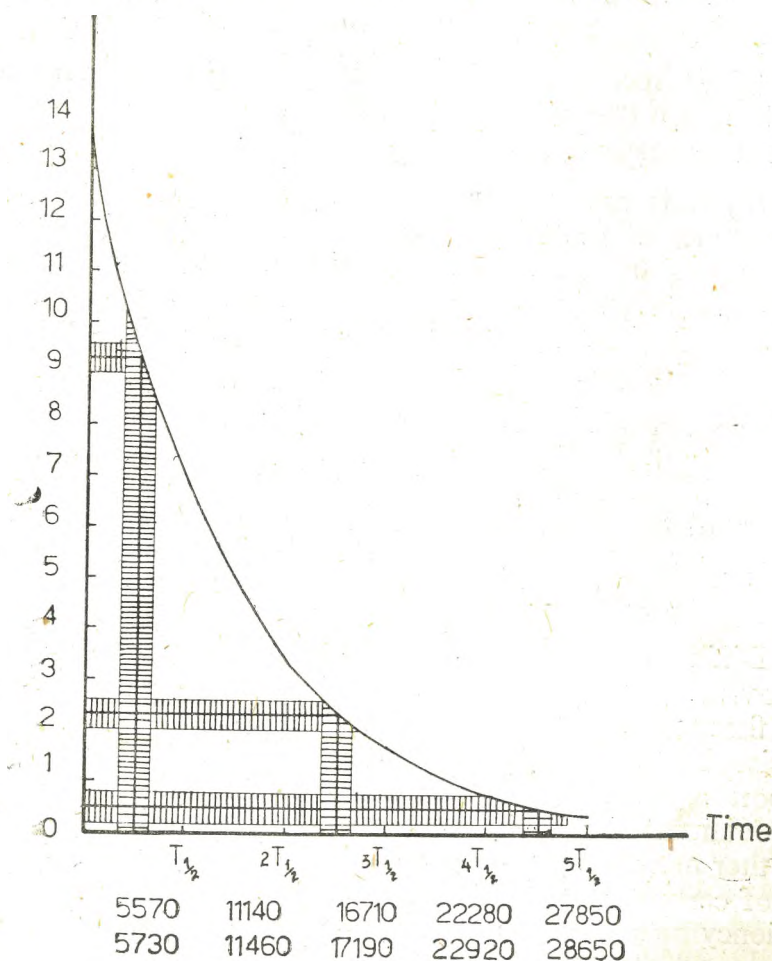


Fig .1

Decay of C-14



## DATING TECHNIQUE

### Background

Carbon-14 is of very low abundance in nature :  $C-14/C-12 = 10^{-10}\%$ , a proportion which cannot be measured by any chemical method. Fortunately C-14 is radioactive giving  $\beta$ -radiation which can be measured by an appropriate counting device.

The low abundance of C-14 as well as the low energy of its radiation render the measurement a very difficult task where it is necessary to satisfy certain conditions :

(a) A special counter of high sensitivity is necessary in which the weak  $\beta$ -radiation can be measured with maximum efficiency.

(b) It is necessary to eliminate the majority of the environmental radiation; this is accomplished either by undergoing the measurement inside an iron-lead castle as in case of gas counting or by reducing the volume of the counter to a minimum as in case of liquid scintillation technique.

(c) A special electronic device is necessary in order to get rid of the high energy components of the environmental and cosmic radiations. By this device it is easy to distinguish between the radiation due to the sample and that due to the back-ground of the counter from extraneous radiations.

Different techniques have been developed since the discovery of the carbon-14 method by Libby in 1947. The first technique developed by Libby and collaborators consisted in introducing the sample in the form of solid carbon as a covering layer on the internal walls of a geiger counter. This technique has been rapidly replaced by other methods due to the fact that it needs big quantities of carbon (about 8 grams of carbon) as well as the efficiency of such kind of measurements is generally very low.

The most wide-spread method is the gas counting technique in which the carbon content of the sample is

transformed into a gaseous form and its activity is measured in a proportional counter. The gases generally used are carbon dioxide (de Vries, Hl., 1953), methane (Burke W.H., 1955; Gilot, 1966) and acetylene (Barker, 1953; Suess, 1954).

A third technique is the liquid scintillation technique in which the sample is transformed into liquid; benzene being the most important liquid used (Tamers, 1965).

From all these methods, we have chosen the proportional counter technique in which the carbon content of the sample is introduced in the form of carbon dioxide (Labeyrie, 1955; Delibrias, 1958) for the following reasons :

- (a) The proportional counter offers a very high counting efficiency, nearly 100%.
- (b) A small amount of material is needed which is a very important factor in the field of archaeology.
- (c) The preparation of carbon dioxide is most adequate for routine work.

The carbon dioxide method has the inconvenience that  $CO_2$  is susceptible to be contaminated with electro-negative gases like oxygen, sulphur and nitrogen oxides which inhibit the detection of the  $\beta$ -radiation. However, this difficulty has been overcome by undergoing certain purification operations as well as by working in a high vacuum atmosphere where the pressure is maintained at  $10^{-6}$  mm Hg.

### Suitability of samples for radiocarbon dating

Though there are some limitations concerning the nature of the materials to be dated as with metals, glass, minerals and geological carbonate samples, yet a large variety of archaeological materials can be dated by the radiocarbon method. Some examples are reeds, grains, wood, charcoal, cloth bandages, peat, human and animal bones, marine shells. The shorter the lifetime of the sample, the better the date obtained.



Wood samples for example which may have lived for several hundreds of years generally give appreciable errors. However, these errors can be minimised by judicious sampling and by determination of the ages of several samples derived from a layer.

Errors arising from the exchange with the surrounding media are most frequent with bone and shell samples but this can be overcome by scratching off the outermost layers and working only with the inner ones.

Great precaution must be taken during sampling; the metal tools used must be very clean and contaminated samples should be avoided. It is usually recommended not to leave the samples obtained from excavations in contact with air for long time and not to mix the different types of samples. The samples must be put in tightly closed nylon bags.

It is to be noted that dates up to 30,000 years can be obtained with our apparatus with a satisfactory precision.

#### EXPERIMENTAL PART

The method adopted in our laboratory for the preparation of carbon dioxide and counting of its activity will be briefly described.

##### (a) *Pre-treatment of samples*

Samples are subjected first to careful examinations and all extraneous objects like rootlets, mud grains, earthy matter, and limy silt are removed by physical methods of separations. Then they are subjected to careful chemical treatment: in case of wood, reeds, textiles, grains and charcoal, the sample is digested with 2N HCL for ten minutes and in case of bones, the sample is ground and left overnight in 2% HCL to remove the outermost carbonate layers. The sample is then washed with distilled water several times, dried at 80°C and weighed.

##### (b) *Combustion of the sample and purification of carbon dioxide*

For carbonate samples, carbon dioxide is liberated directly by treatment with conc.  $\text{H}_2\text{SO}_4$  in a closed evacuated system Pl. I a. Carbon dioxide is condensed in a trap cooled at liquid nitrogen temperature and water vapours are retained in two traps cooled at  $-80^\circ\text{C}$  (a cooling mixture for this purpose is obtained by the addition of liquid nitrogen to ethyl alcohol up to the desired temperature).

In case of materials of organic nature, carbon dioxide is obtained by combustion in a stream of oxygen in the apparatus shown in Pl. I b. A weighed quantity of the treated sample is placed in the quartz tube and oxygen is passed through the system for 5 minutes to flush out air and traces of carbon dioxide from previous runs. Then the oxygen flow is allowed to pass through the evacuated traps which are connected to the pump.

The sample is then burnt by heating with a bunsen flame and the flow of gases is passed through copper oxide granules heated at  $600^\circ\text{C}$  in order to oxidise carbon monoxide to carbon dioxide. The produced gases are then passed through silver nitrate and sulphochromic acid traps successively in order to remove halogens, sulphate, phosphate and nitrate ions. Finally  $\text{CO}_2$  is precipitated as barium carbonate by bubbling through barium hydroxide solution. The carbonate is then filtered, washed with distilled water and dried at  $80^\circ\text{C}$ . Carbon dioxide is regenerated by  $\text{H}_2\text{SO}_4$  treatment as previously mentioned.

Alternatively,  $\text{CO}_2$  may be condensed directly in traps cooled at liquid nitrogen temperature. In order to avoid condensation of oxygen together with  $\text{CO}_2$ , the pressure in these traps is not permitted to exceed 5 cm during combustion. The solid carbon dioxide produced is then directly transferred by defreezing into special 5-liter reservoirs. There it is kept for 2-3 weeks to allow complete



decay of any traces of radon which may be found as contamination in the sample.

The gas is then subjected to special purification steps intended to remove electronegative impurities which inhibit the detection of the  $\beta$ -radiation as well as to remove minor traces of water. The latter has a very bad effect on the counting rate.

Purification is accomplished by a series of fractional distillations during which  $\text{CO}_2$  is condensed by liquid nitrogen, then allowed to evaporate by using a cooling mixture at  $-80^\circ\text{C}$  for several times. Carbon dioxide is then trapped over aluminium oxide for one hour, then allowed to pass through  $\text{P}_2\text{O}_5$  column as a final drying agent; the apparatus used for this purpose is shown in Pl. II. During all these operations, the pressure inside the apparatus is not permitted to exceed  $10^{-6}$  mm Hg.

The proportional counter (Pl. III) is then filled with the gas at 740 mm Hg pressure.

(c) *Preparation of carbon dioxide from the standard oxalic acid N.B.S.*

In our laboratory, the oxidation of oxalic acid by acidified potassium permanganate has been found to be the best method for the preparation of standard carbon dioxide. Carbon dioxide is produced by the simultaneous addition of a saturated solution of potassium permanganate and conc.  $\text{H}_2\text{SO}_4$  in a very low rate to solid oxalic acid in a closed evacuated system. Water and alcohol vapours evolved are retained in two traps cooled by a cooling mixture while  $\text{CO}_2$  is condensed by liquid nitrogen. The solid carbon dioxide container is then fitted to the high vacuum apparatus and  $\text{CO}_2$  gas is stored in one of the joined reservoirs. The oxidation process can simply be done in the carbonate-attack system (Pl. I a). A concentrated solution of  $\text{H}_2\text{SO}_4$  acid is added to a weighed quantity of oxalic acid in the round-bottomed flask. Carbon dioxide is then liberated by the drop-wise addition of the permanganate solution. The gas obtained by this method is generally very pure and the yield is quantitative.

(d) *Counting technique*

The gas proportional counter filled with the  $\text{CO}_2$  gas whether produced from the investigated material or from the standard oxalic acid is placed in the center of a support carrying 40- Geiger counters type "Lc T 10-c-8". These counters are placed in two alternative layers in such a way that the muons which can penetrate the protective shield pass at least by one of them. The support is put inside a plastic box which in turn is disposed in the center of an iron shield 30 cm thick. The iron bars obtained from the iron and steel factory of Egypt proved to be very pure from radioactive isotopes.

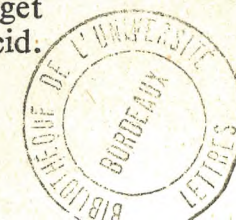
The basic electronic equipment used in Cairo C-14 dating laboratory is of a transistor type model RA 14 Intertechnique. It analyses the different pulses originating in both proportional and Geiger counters (Pl. III and IV). A special anticoincidence arrangement assures the separation of the pulses due to the environmental and cosmic radiations from that due to the investigated sample and background. Moreover, pulses due to the sample and background are directly given on a separate scaler.

(e) *Calculations*

1. The number of counts per unit time due to the background of the proportional counter (B) is first determined after several runs and with great precision and a mean value is obtained fig 2.

For this purpose the counter is filled with ancient  $\text{CO}_2$  gas of more than 50,000 years old and which was previously submitted to the standard purification procedure.

2. The net counting activity per unit time due to modern carbon ( $N_0$ ) is then determined after several runs with  $\text{CO}_2$  obtained from oxalic acid standard. The obtained mean value is multiplied by 95% factor to get the true value for the  $\text{CO}_2$  obtained from the oxalic acid.





3. The net counting activity per unit time due to carbon of the sample ( $Nt$ ) is the mean value of two successive runs of long duration.

The background of the counter is generally checked before and after every two sample runs and the activity due to modern carbon is monthly determined.

4. The age of the sample is obtained by substituting in the following equation :

$$N_T = N_0 e^{-\lambda T}$$

5. The experimental error  $\sigma N$  is conventionally adopted. This corresponds to a probability of 68% to get out the real value of  $N$  in the range from  $N - \sigma N$  to  $N + \sigma N$ .  $N$  in this case is the mean value of two measurements of long duration (1000 minutes each). If  $B$  is the number of counts per unit time due to the background of the counter and  $t$  the time of counting then following Poissons's law :

$$\sigma B = (Bt)^{0.5} (t)^{-1} \text{ and } \sigma N = (\sigma^2 N + B + \sigma^2 B)^{0.5}$$

$$\text{i.e. } \sigma N = \left[ \frac{N + 2B}{t} \right]^{0.5}$$

The minimum error for the determination of  $N(N=0)$  is

$$\sigma N_{\min} = \left[ \frac{2B}{t} \right]^{0.5}$$

By taking the minimum number of counts which can be measured as equal

$$\sigma N_{\min} + \sigma B$$

then the maximum limit of dated time which can be obtained by a given technique and apparatus will be equal to

$$T_{\max} = \frac{1}{\lambda} \text{ Log } \frac{N_0 (t)^{0.5}}{2.414 (B)^{0.5}}$$

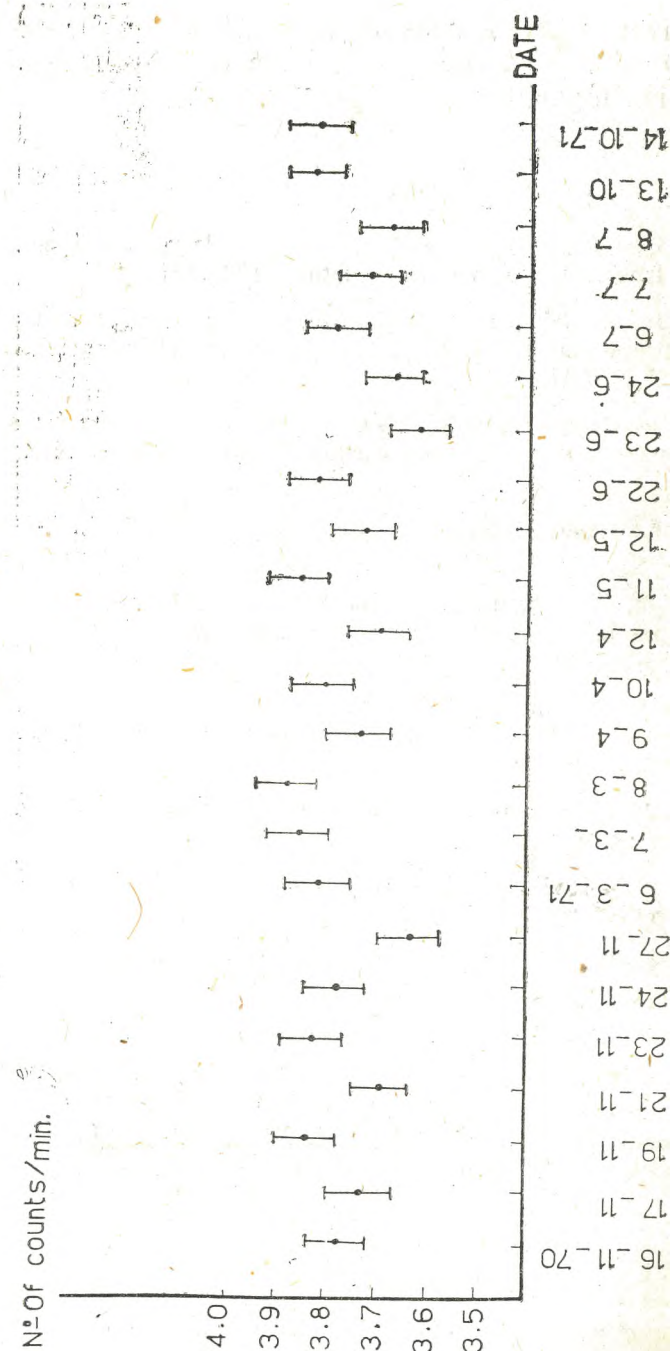


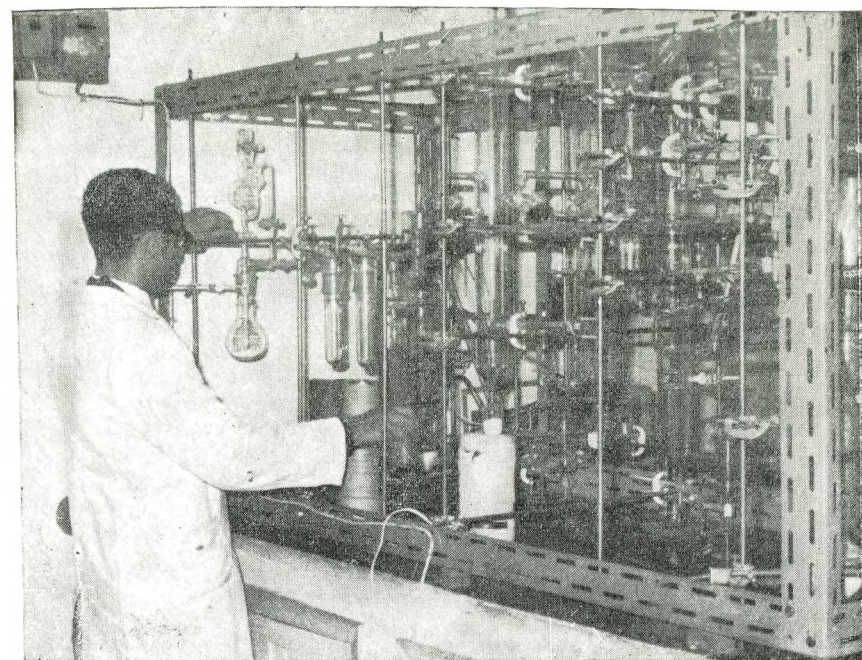
Fig. 2.—Reproducibility of the background of the counter C—18



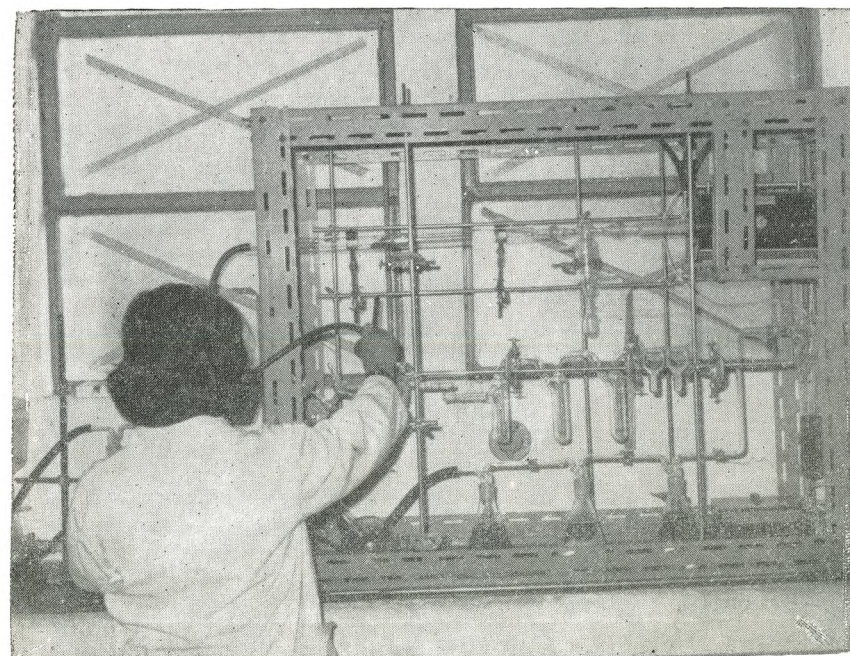
For a given time of measurement, 24 hours for example (1440 minutes), the limit of age is proportional to the niperian logarithm of  $No / (B)^{0.5}$ .

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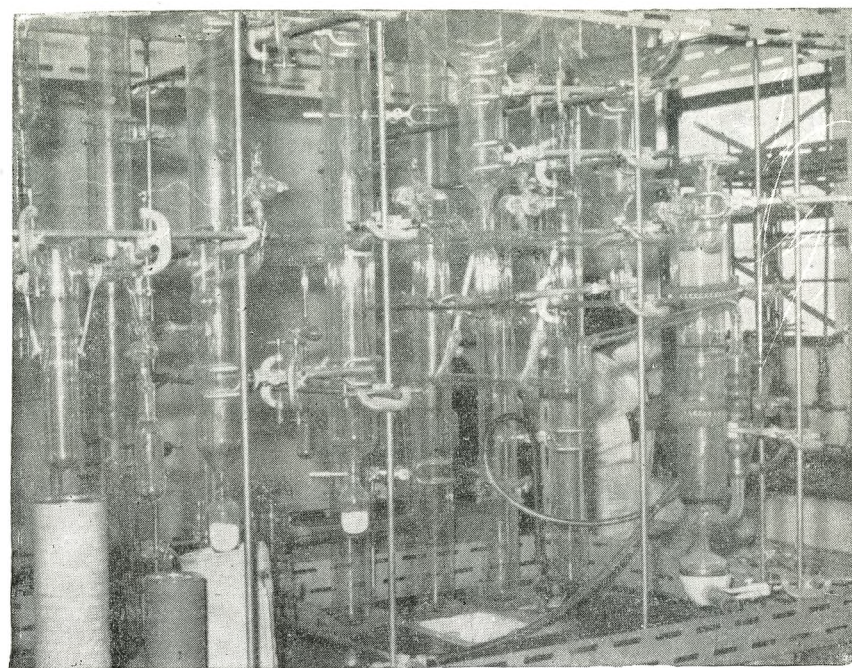


(a).—Carbonate-Attack system

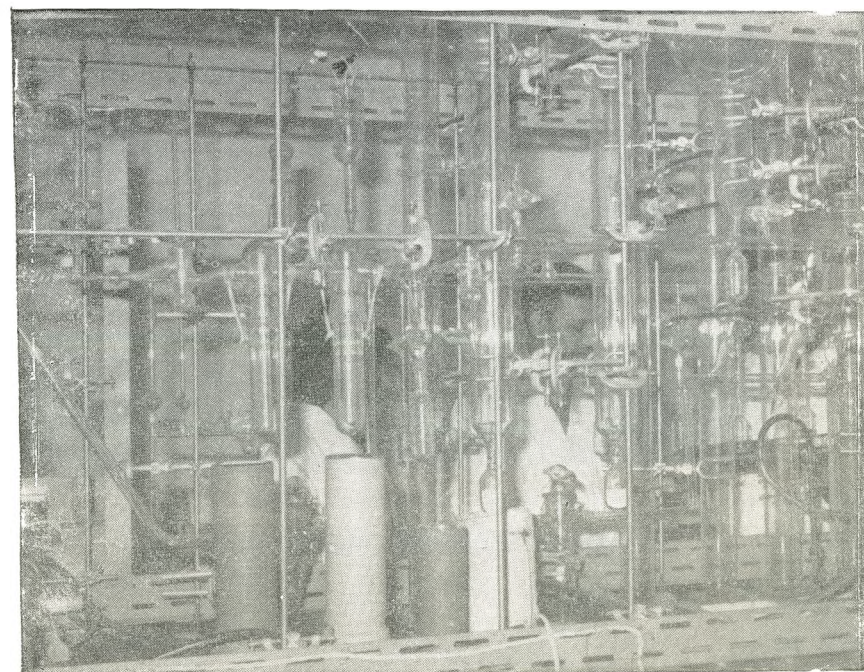


(b).—Sample combustion system.



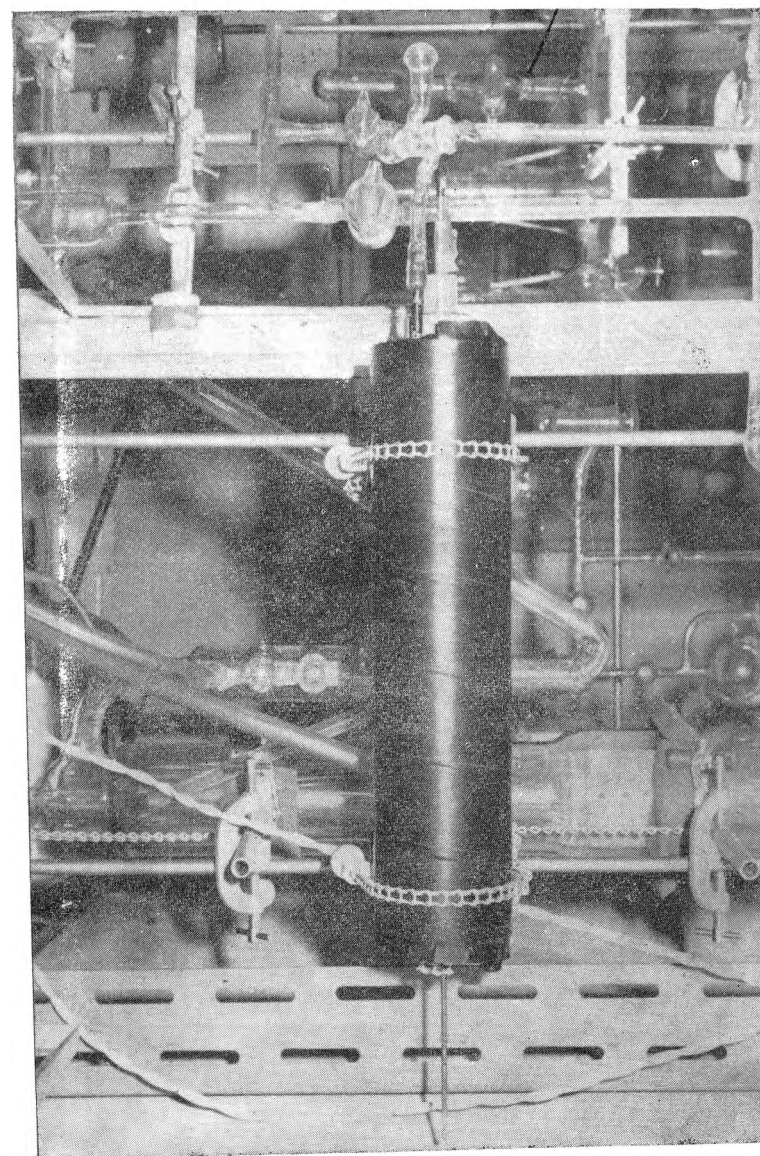


(a).—Carbon dioxide purification system



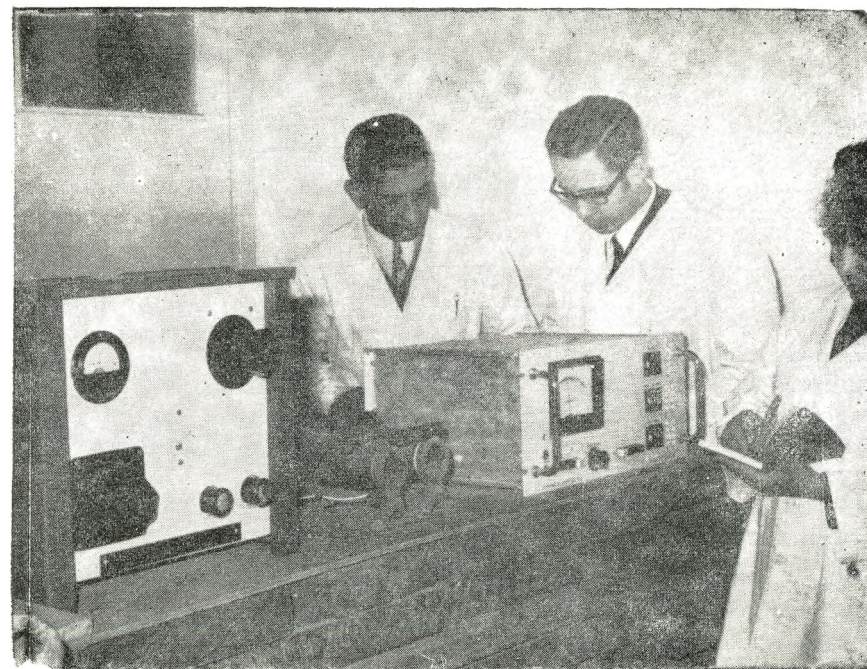
(b).—Carbon dioxide purification system





Carbon dioxide proportional counter.





Electronics and castle.



# AN ENIGMATIC WOODEN OBJECT DISCOVERED BESIDE THE SOUTHERN SIDE OF THE GIZA SECOND PYRAMID

BY  
A. HAFEEZ ABD EL SAL

## An Enigmatic Wooden Object

The clearing of the Pyramids Zone of debris and sand, formed part of the project of improving the area for tourism.

Through the ages, debris and sand covered the four sides of the Second Pyramid to a height of nearly fifteen metres. The late archaeologist Zaky Noor ; cleared a part of the northern side, and a part of the area in front of it, during the winter of 1957 and the early months of 1958. When I replaced him as keeper of the Pyramids Zone, I started my work there by continuing his clearance ; this work stopped in April 1960.

Nothing of importance was found except a number of grey granite blocks. On the 1st of may 1960, I transferred the work from the eastern side to the southern side which was covered with debris to almost the same height as on the northern side. It formed a mound of about 15 meters high (PL. I).

As usual, the debris was carried away from the site to a dump to the east of the 3rd Pyramid. We began clearing dust and sand from the surface of the rocky ground in order to lay the sections of the rails in this area. The work began by clearing the lower edge of the debris beside the south-eastern end of the pyramid towards the west, as far as the side of a small ruined pyramid, called "The queen's Pyramid".

It was necessary to clean the area of this small pyramid, before fixing the other sections of the rails. As the work progressed / Suddenly noticed a rectangular stone block, marked in the rocky ground on the surface level. At first glance, I thought that its outer lines were cracks ;



but after examining them I found that the stone was fixed to the rock by gypsum mortar. With a thick iron bar, the workers raised the stone block. It was a lid covering a pit hewn in the rock and full of dirty sand. (Pl. II) It was 1.65 m. long, 80 cm broad and 25 cm deep - the same thickness as the stone lid which we removed.

The western edge of the pit was slightly longer than the eastern, because of the two small additional pieces on both sides which gave the block the form of the letter (T). After lifting the layer of sand to the depth of nearly 50 cm, new layer of limestone debris appeared (Pl. III A). When this was removed, it became clear that we had found a sloping passage going down obliquely at an angle of nearly forty five degrees (45°). The Clearing of the passage continued to the depth of (250 cm) until the layer of debris was finished and a large rectangular limestone block appeared (Pl. III B); it closed the whole rectangular passage and fitted it closely, but the slope continued going down.

It was a problem to remove the block; but Mr. Mohamed Fathy Abdel Rehim, the architect of the Pyramid's Zone, cut an oblique hole in the face of the block at an angle of 45°; and fixed an iron hook in the hole tying one end of a thick rope to the hook (Pl. IV A). The other end of the rope was attached to a pulling machine which faced the pit to the west, and a cylindrical beam of hard wood was put below the rope on the upper edge of the pit. The workmen began to turn the handle of the machine, pulling the rope in a west ward direction slowly over the cylindrical beam and pulling up the stone block. The block began to move gradually out of the sloping passage (Pl. IV B); until it reached the surface. A second block appeared below; inside the passage. The 1st block was placed to the north to the pit (Pl. V. A.B); It was 1.20 m long; 75 cm broad and 75 cm thick. We then returned to the passage, to prepare to pull out the second block, which we achieved by the same method as we used for the 1st block but on this occasion with more care, because of the heaviness of the block. When it was

removed we put it on the eastern side of the 1st stone. It was 135 cms long, 75 cms broad and ; 75 cms thick. A third block now appeared inside the passage when we had removed the second; We began to prepare to remove it (Pl. VI A) in the presence of the minister of Culture (Dr. Tharwat Okasha) as he was visiting the site (Pl. VI B). We followed the same method as before, but with extreme care, because the third block was much heavier than the other two (Pl. VII A). It was placed by the edge of the pit beside the other two (Pl. VII B). It was 180 cms long, 75 cms broad and 75 cms thick. The weights of the three blocks were as follows: 1.48 Tons, 1.61 tons, 2.23 tons. They were placed inside the passage where we traced also see the stone lid, the sand layer, and the layer of the limestone-rubbish.

We could not see any thing inside the passage because of its darkness (Pl. VIII A), so we used a lantern and a long wooden ladder to descend (Pl. VIII B). When we reached the bottom, we found a wooden box on the right hand side, inside a niche hewn in the rock. The niche is 107 cms long, 62 cms deep, and 66 cms high; while the box is 105 cms long 49 cms broad, and 29 cms high.

It almost filled the whole width of the niche; but was 37 cms. Lower than the height of the niche. We examined the sides of the passage, but nothing more was found, for its walls were as solid as the rocks of the Pyramids zone.

Haji Ahmed Yousef, the chief restorer of the Antiquities Department, who is in charge of restoring the solar boat beside Cheops Pyramid, began to examine the box.

It was of dark brownish colour, because of its great age. It was closed by a wooden lid and tied with thin linen rope (cf. pl. XIII). It was very heavy and we could not move it, because of its heaviness and because it nearly completely filled the niche.

At last we decided to open it *in situ*. Haji Ahmed Yousef tried to untie the knot of the rope, but he was



unable to do so because the knot was fragile ; so he cut the rope which was very weak. The four wooden nails fastening the lid to the box, were not very firm and the box was easily opened; the lid was easily removed to a tray. A layer of a very carefully arranged cylindrical pieces of solid wood was revealed, filling the surface of the box (Pl. IX). We examined every piece and we believed that they were the parts of one cylindrical piece of wood, roughly cut by an axe before being put into the box for an unknown reason. Haji Ahmed marked them *in situ* with white numbers (1 - 25). He transferred them to another tray, piece by piece in the same manner, including a quantity of small wooden fragments resulting from the ancient cutting by an axe. He collected them and put them aside inside the tray with the other cut pieces.

The different pieces were arranged in the wooden tray (Pl. X A) and transferred to the laboratory. A second layer of cylindrical cut pieces appeared in the box. They were arranged also with care (Pl. X B). Two fastening copper staples, were fixed to two of the broken pieces of the second layer. These pieces were marked from 26 to 45 and also transferred to another tray (Pl. XI A) and again sent to the laboratory. The third layer was examined at the bottom of the box and numbers were put on every piece from 45 to 56 (Pl. XI B). Again the pieces were transferred to a third tray (Pl. XII A) which was sent to the laboratory. To facilitate studying all the pieces of the three layers, Haji Ahmed Yousef removed them from their three trays to a single wide tray as one group according to their numbers (Pl. XII B). After restoration it was hoped to discover the nature of the object that had been found. The lid of the box was carefully brought to the laboratory inside another tray (Pl. XIII A). The box remained in its original place inside the passage. Haji Ahmed Yousef tried to raise the box itself but it was broken into pieces because its wooden nails were too fragile to hold its different parts together, so Haji Ahmed was obliged to remove it in pieces to the laboratory after marking each piece with a number. He now began to study and restore the different cylindrical wooden pieces, together with the box and its lid.

A list of the cylindrical pieces registered by Haji Ahmed Yousef.

Number	Dimensions	Substance	Description (Length - L) (Breadth - b)
1st layer below the lid (1 - 25)			
1	L 32 cm B 4 cm	wood	A quarter of a cylindrical piece.
2	L 27 cm	wood	A pointed beam with two faces : one oval and the other is irregular.
3	L 26 cm	wood	A piece with two curved surfaces; the shape of the other is irregular. There is a rectangular hole in the oval surface; its dimensions are : 4x1,5 cm. It contains a part of a wooden lever. There is a scratch in the end which contains a wooden lever ; the other end is intentionally broken.
4	L 33 cm	wood	A piece of two surfaces, one curved, half cylindrical. One end is hollow, the other is broken.
5	L 33 cm	wood	A half of a cylindrical piece cut lengthwise. One of its ends has a part of a concave crack which contains a part of a lever 3 cm in length. The other end is concave.
6	L 41 cm	wood	A half cylindrical piece with a rectangular hole, measuring 4 x 1,5 cm and 9 cm from the broken end; the other end has an oval crack and a part of a lever.
7	L 45,5 cm B 3,5 cm	wood	A long piece with one curved side ; the other is 1,3 cm in thickness. It has three double holes through its thickness and a crack of 1/2 cm depth in the curved side.
8	L 18 cm	wood	A broken part of a cylinder.



Number	Dimensions	substance	Description (Thickness-Th) (Diameter-Dia)
9	L 38 cm	wood	A part of a cylinder cut lengthwise ; one of its ends is curved, the other is broken.
10	L 74,5 cm B 7,5 cm Th, 5,5 cm	wood	A square piece with concave ends. at the ends of one face, there are two scratched remains of levers, beside each some of the connecting pieces inside two holes. At the two ends of one of the two thicknesses of the piece, there are two scratches measuring $4 \times 2,5$ cm.
11	L 7 cm Dia 7 cm	wood	A cylindrical piece ; one of its ends is flat, the other is broken 25 cm from the flat end ; there is a shallow scratch measuring 4,5 cm X 1,5 cm. Beside it there are the remains of a connecting piece and a shallow scratch measuring 34,5 cm from the flat end, measuring 35 X 1,5 cm and forming a right angle with the inside.
12	L 70 cm Dia 7 cm	wood	A cylindrical piece with, one flat end, the other being broken. At the flat end there are some parts of connecting pieces inside two holes ; 4 cm from the flat end there are two holes.
13	L 54 cm Dia of one end 4 cm. Dia of the other 4,7	wood	A cylindrical piece tapering to a point. Its two ends are oval. The narrow end, terminates in a lever measuring 5,5 cm long 3,5 cm broad ; the other ends with a broken part of a lever.
14	L 74,5 cm B 7,5 cm Th 5,5 cm	wood	An oblong piece with concave, ends. At the end of one side there are two scratches with some pieces of two levers. Beside each lever, there are the remains of connecting

Number	Dimensions	Substance	Description (Width cm)
			pieces inside two holes. At the end of one of the two thicknesses of the piece, there are two scratches measuring $4 \times 2,5$ cm.
15	L 67 cm	wood	An oblong piece with concave ends ; One of its sides is irregular and contains traces of scratches, one of them measuring $3,50 \times 1,5$ cm ; the other is partly broken. There is a part of a lever in one of its ends.
16	L 34 cm	wood	A broken piece with three sides ; one of them is curved. There is a scratch with the remains of a connecting piece.
17	L 38 cm	wood	A piece of two sides ; one of them is curved the other is irregular ; one end is oval with the remains of a lever ; the other is broken, and near it there are a broken scratch and the remains of a connecting piece.
18	L 62 cm	wood	A cylindrical piece with two oval ends. Inside each of them there is a lever containing a connecting piece measuring $4 \times 1,5$ cm. In this piece there is a scratch measuring $4 \times 1,5$ cm. It forms a perpendicular with the other two scratches.
19	L 57 cm	wood	A long piece with two sides ; one of them is curved ; the other is flat ; its breadth is 5,5 cm. One of its two ends is pointed, while the other has a part of an oval scratch.
20	L 24 cm	wood	A piece with a flat face measuring 4, 5 cm wide ; the other face is



Number	Dimensions	Substance	Description (Width—W)
			curved. Between the two faces there is a break. One of the two ends is broken, while the other has a part of a lever inside it measuring 2,8 x 3,6 cm.
21	L 2,5 cm W 3 cm	wood	An offset.
22	L 22 cm	wood	A piece with one flat face, the other being curved; there is a break between them. One of its ends is broken, while the other has a lever inside, measuring 3,5 x 2,8 cm.
23	L 24 cm Dia 5,5	wood	A cylindrical piece; one of its two ends is curved while the other has a lever inside it measuring 3 x 2,5 cm.
24	L 29 cm Dia 6,3 cm	wood	A cylindrical piece with a broken end; it has a part of an oval hole. The other end has a hollow scratch and a lever measuring 4,5 x 2,5 cm.
25	L 4,5 cm	wood	A piece similar to 7. It is thought that it served as a thin frame for the lid on the eastern side according to the position of the box inside the niche.
—2nd layer (26 - 45) —			
26	L 44,5 cm Dia 5,5cm	wood	A half length cylindrical piece; one end is cut flat with a part of a lever inside it, while the other end is broken.
27	L 15 cm Dia 5,5cm	wood	A half length cylindrical piece; one of its two ends has a flat surface and a part of a lever inside it,

Number	Dimensions	Substance	Description
			measuring 3 x 3,5 cm; the other end is broken.
28	L 15 cm Dia 6,5 cm	wood	A cylindrical piece; one of its ends has a deep scratch and a lever in the middle of it measuring 45 x 3 cm. There are two holes at the ends with a flat lever inside one of them - the other end is broken and has a vertical hole with the lever of the other end.
29	L 15 cm Dia 6,5cm	wood	A cylindrical piece; one of its ends has an oval scratch with a lever in its middle measuring 3 x 4 cm. At the ends of the scratch there are two holes with a flat surface inside them, which runs into the lever. The other end is broken.
30	L 19 cm Dia 6 cm	wood	A cylindrical piece; one of its ends is curved and has a hole inside it. A part of a lever is inside, forming a right angle, the other end is broken.
31	L 14,5 cm	wood	A piece with two faces; one is round, the other is irregular. One of its ends has a part of a deep scratch and a lever measuring 4, 3 x 2 cm.
32	L 16 cm	wood	A piece with two sides; one of them is round the other is irregular. One of its ends has a deep scratch, the other is broken.
33	L 38 cm Dia 5,5 Cm		A semi-circular piece; one end is a straight cut and has a part of a lever, the other is broken.
34	L 71 cm	wood	A big piece with four sides; two of them are flat, forming a right angle. At the two ends of one of them there are two deep holes, each measuring



Number	Dimensions	Substance	Description
			2,5×2 cm. At the two ends of the other side, there are two holes measuring 2,5×2 cm ; and they are perpendicular to the other two holes and each of them measures 2×4 cm. They are filled with levers cut at the same level. One of the other two sides is hollow at one of its flat ends and has a round projection measuring 1 cm thickness 6,2 cm height and 6,2 cm width, fixed to this surface. The fourth side curved and the two ends form two obtuse angles. Each angle has two holes ; in each hole there is a connecting piece of wood.
35	L 53,5 cm	wood	A semi-cylindrical piece ; and in each of its two ends, there is a wooden lever ; the first measures 2,5×3,3 cm and the other measures 3×3,5 cm.
36	L 66 cm	wood	A piece similar to number 34 except that one of its ends is cut flat and it has a small protrusion measuring 5,5×6 cm. In the middle there is a part of a wooden lever fixed into a deep hole measuring 4×2,5 cm.
37	L 51 cm	wood	A piece measuring 51 cm in the shortest of its sides. It is similar to 34 and 36 except that it has no bronze handles, and its ends are cut at an angle of 45 degrees. There is a deep hole in this angle, forming an obtuse angle with rest of a wooden lever. The other end is similar.
38	L 50,5 cm	wood	A piece similar to 37 except that in one of its two ends, there is a small wooden piece fixed at an angle of 45 degrees. In this piece there is a part of a deep hole measuring 4×2 cm.

Number	Dimensions	Substance	Description
			and this extra piece forms a part of the side which is perpendicular to the principal piece.
39	L 31 cm	wood	A piece partly cylindrical ; this part measures 10 cm long. The remaining part has two faces ; one of the two ends is flat and the other has an oval scratch with a wooden lever in the middle of it measuring 2,5×3,5 cm.
40	L 21 cm	wood	A piece with four flat sides. In two of the sides there are three shallow scratches, each measuring 4×1,2 cm. One of the two ends is flat and has the remains of a wooden lever ; the other end is broken.
41	L 23 cm	wood	A piece similar to 40.
42	L 27 cm Dia 5,5 cm.	wood	A semi-circular piece with one flat end containing a wooden lever measuring 3,5×2,8 cm ; the other is broken.
43	L 34 cm	wood	A piece similar to 42.
44	L 52 cm	wood	A cylindrical piece with an oval scratch which contains the remains of a wooden lever.
45	L 52,3 cm Dia 5,6 cm.	wood	A cylindrical piece, similar to 44.
3rd Layer 46 — 56			
46	L 20 cm B 10 cm Th 5,5 cm.	wood	A piece with four flat sides. In one of its two faces, there are three shallow holes measuring 4×1,5 cm. One of the two ends is flat and contains the remains of a wooden lever



Number	Dimensions	Substance	Description
			while the other is broken (This piece is similar to 40 and 49).
47	L 20 cm	wood	A piece similar to that of 46.
48	L 71 cm Dia 7 cm	wood	A part of a cylindrical perpendicular piece ; one of its ends is cut flat, and the other is broken. At a distance of 25 cm from the flat end, there are two shallow holes close together ; the first measures 5×2 cm and the other measures 4×1,5 cm.
49	L 69 cm Dia 7 cm	wood	A part of a cylindrical perpendicular column. One of its ends is flat, the other is broken.
50	L 96 cm Dia 7 cm	wood	A part of a cylindrical perpendicular column. One of its ends is flat, the other is broken. At a distance of 24,5 cm from the flat end there is a perpendicular hole measuring 45×1,5 cm. Next to it at a distance of 34 cm in its side, there is a deep hole at an obtuse angle measuring 3×1,5 cm. At a distance of 8 cm from the broken end, there is a deep hole cut at an obtuse angle, with a length of 3×1,5 cm.
51	L 92 cm	wood	A part of a cylindrical perpendicular column ; one of its sides is flat, the other is broken. At a distance of 6 cm, from this end there is a deep hole measuring 4,5×1,5 cm.
52	L 19 cm	wood	A vertical half of a cylindrical piece. One of its ends is cut flat and has a wooden lever measuring 3×35 cm ; the other end is broken.
53	L 9 cm	wood	A vertical half of a cylindrical piece. One of its ends is cut flat and has a wooden lever measuring 3,5×3,5 cm.

Number	Dimensions	Substance	Description
54	L 94 cm	wood	A part of a cylindrical piece. One of its ends is flat and the other is broken. At a distance of 11 cm from it, there is an obtuse angled scratch measuring 3×1,5 cm.
55	L 73 cm Dia 3,5 cm	wood	A thin cylindrical part. One of its ends is flat and the other is cut obliquely, measuring 16 cm on one side and 7 cm on the other side.
56	L 93 cm Dia 7 cm	wood	A part of a cylindrical column. One of its ends is flat and the other is broken. At a distance of 25 cm from the flat end there is a shallow hole measuring 5×2 cm. Next to it there is another hole, at a distance of 31 cm from its end, measuring 2×4 cm. At the broken end there is a broken piece measuring 22 cm ; in its middle there is a shallow hole measuring 4×2 cm.
<b>The Box</b>			
1	L 105 cm B 47,5 cm Th 1 cm	wood	<i>The lid.</i> Consists of two long boards. In the middle of one of them there is a connecting piece semi-circular in shape measuring 20 cm long and 10 cm wide ; it has many long cracks. On the lid we found the remains of a thin twisted thread and at its two ends we found many holes with wooden nails used for fixing its parts.
2	L 105 cm H 25 cm Th 1,5 cm		<i>The Southern side of the box according to its position when found in the niche</i>  It has many tiny holes. Those on the ends are filled with connecting pieces. In the middle of its length there are two holes, probably made for the thread to go through. In



Number	Dimensions	Substance	Description
			the two narrow sides of the bottom inside the box, there is a batten measuring 1 cm broad.
			— The eastern side of the box —
3	L 46 cm H 25 cm	wood	It consists of two parts and it has a batten in the bottom measuring 1 cm broad. It contains many holes for fixing wooden nails. The wood of this side is in bad preservation.
			— The western side of the box —
4	L 46,5 cm H 25 cm		It consists of two parts, and it has a batten in the bottom and some holes for the wooden nails.
5	L 105,5 cm H 25 cm	wood	It has some cracks and a batten in the bottom measuring 1 cm broad, and some holes for the wooden nails.
6	L 103 cm B 46 cm	wood	It consists of two wooden boards each measuring 103 cm long and 23 cm broad. In one of them there is an oval wooden patch measuring 20 cm long and 6 cm broad. Both boards contain many large cracks. All parts of this bottom are in a very bad state of preservation. Under the box at the eastern and western sides of the bottom, there were two long narrow pieces on which the box rested in the niche each measuring 48,2 cm long and 5 cm broad. The eastern one was fragile.
			<i>N.B. Many small fragments of wood.</i> A quantity of wooden fragments were found below and between the wooden contents of the box. It is believed that they were the remains of the intentional destruction which affected all the parts of the contents of the box.

**The Restoration of the box and its contents, described by Haji Ahmed Yusef.**

From what we have mentioned about the dimensions and description of the contents of the box, we know that they comprise broken pieces of wood which were put with great care inside the box. They were carefully arranged in three layers, one upon the other. The 1st layer contained 25 pieces; the second, 20 pieces, and the 3rd 11 pieces. All of them were removed to the laboratory for restoration. It was necessary to record the position of each piece in relation to the other pieces, in order to make use of every bit of evidence in restoring the piece to its original shape. In the laboratory, all the broken pieces were laid side by side to facilitate study and examination. If we look carefully at most of the pieces, we can observe that they were crushed and broken intentionally in a curious manner.

It was also noted that they were not only disconnected in an unusual manner, but that they had been broken in two ways: firstly by planing with an axe or a chisel, and then breaking at the point of planing: Secondly by sawing.

The restoration began with the selection of all the similar pieces and putting them aside in their different groups in order to facilitate counting and studying them. By this method we succeeded in discovering the principal important parts of the monument. These parts consist of four cylindrical columns each of which in turn consisting of two parts measuring 171 cms long and 7 cms in diameter; four parts, in the form of a sloping cornice 10 cms thick measuring 80 × 68 cms at its upper edge and 70 × 60 cms at its lower edge. Six parts which constitute an oblong base 5 cms thick and with outer dimensions 74 × 63 cms. Inside this base, there are six cylindrical pieces, equally cut forming a half circle at each end. They are arranged side by side parallel to the two long base sides. The other broken pieces when gathered



were ten in number. Among these pieces there is one small extraordinary piece, half of its length being cylindrical, the other being semi-circular. All these parts are separated from each other, but they are of similar length. At each end there is a wooden lever inside a hollow part. After describing these principal pieces and defining their correct shapes, we started treating every piece and restoring it as follows :

(1) *The cylindrical columns.*

Long wooden nails were put in all the broken parts of the columns to fix all the similar parts together leaning the damaged places exactly as they were found.

(2) *The Cornice.*

We easily were able to join its four parts, because its four corner angles were found intact.

(3) *The Base.*

We joined the two front parts and fastened them together with flat wooden levers ; new levers were fixed to the faces of the two front ends in place of the old broken ones. The same method was used in restoring the semi-cylindrical interior pieces. Then the two front corners of the base were fixed to the interior pieces of the two sides again by means of new wooden levers.

(4) *The cylindrical disconnected parts.*

To restore these pieces we were obliged to fasten every two of them by a small wooden nail which fitted the place of the break, as was done in restoring the columns, in order to keep the broken ends exact as they were found. After restoring all these principal parts of the object, we began to study how we could arrange and fix them together in order to discover the original shape and general view of this damaged antiquity.

We then observed some tiny distinguishing signs upon the ends of the cylindrical columns. These signs

are : + on one of the columns ;  $\equiv$  on a second column ; = on the third ; and — on the fourth column. At the same time we found similar signs on the parts of the cornice and the base ; so it was easy for us to put every column in its original position between the base and the cornice by fixing new wooden levers in the two ends of every column replacing the original levers which were broken when the object was cut up in ancient days. The remaining parts were left inside the holes of the base and the cornice.

The reconstruction was an important step in the process of reassembling and restoring the antiquity to its original form.

After fixing the columns in their places, we tried to put the other cylindrical parts in their proper places between the columns. By comparing the dimensions of these parts with those of every column and the shapes of the wooden levers at the two ends of every cylinder in relation to the width of the holes of every column ; we were able to sort the cylindrical parts into groups, each of which consisted of identical components made up of two parallel cylindrical parts connected by a third in the form of the letter H. Each of them was put in its proper place between the columns. A perpendicular rod which connects the lower level of the cornice with one of these H-shaped sections, has a special place in the back of the antiquity ; it helped us to appreciate the correct positions for these H-shaped sections. Thus the process of restoration was completed in a very accurate manner, and the object is now ready to be studied in order to determine what it is (Pl. XIV, A.B.).

### The restoration of the box.

We began restoring the wooden box in which we found the broken pieces as follows :

First we began by collecting the boards of the box sides and the bottom ; all the side boards were connected together by means of thin levers which were suited to the thickness of the boards, which was only 1 cm. All the sides were placed, one beside the other in their original



positions and were connected together with a thin linen rope together with some levers suitable for fixing the rope into the four corners of the box.

Finally it appeared that the box was originally constructed in the manner which we determined during restoration. (Pl. XV).

#### Substances used in restoration

The chemical substances used in restoration were as follows :

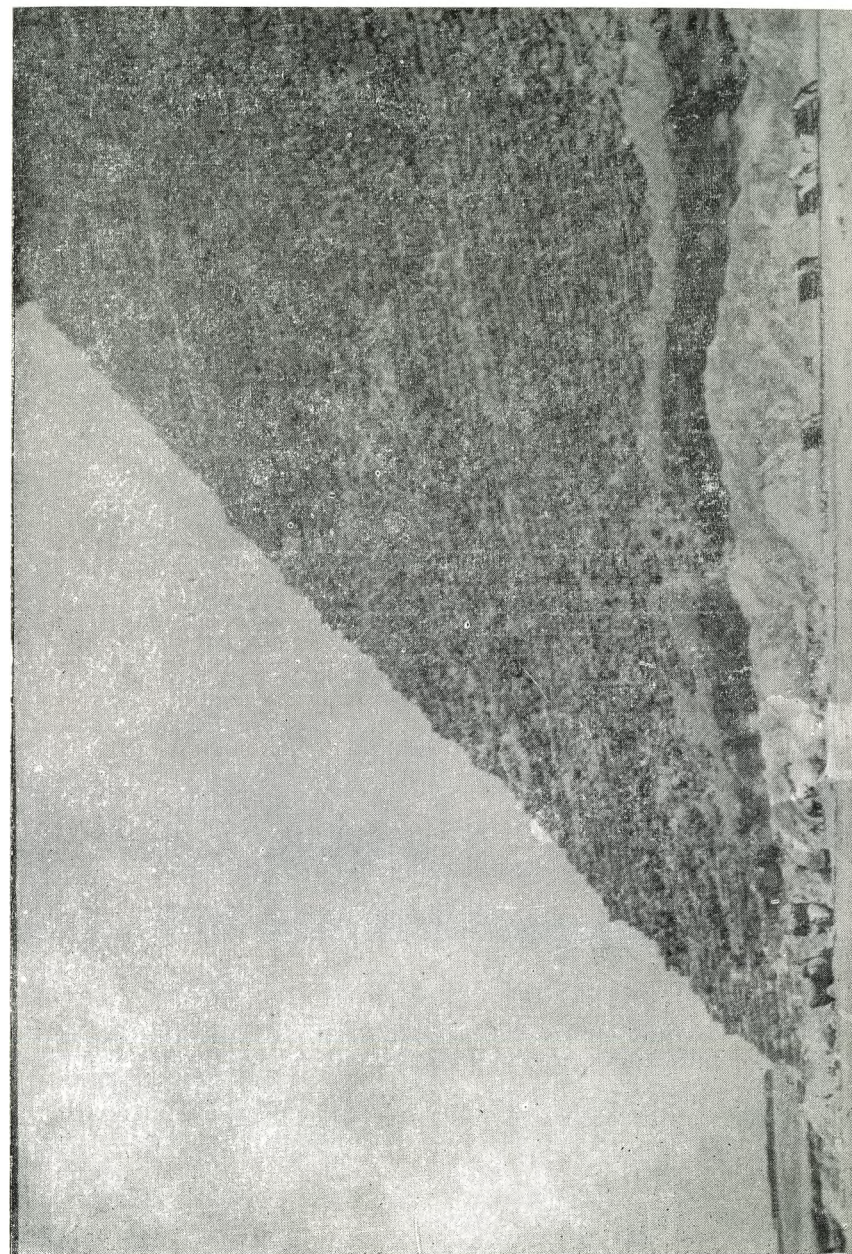
(1) A Polyvinyl acetate solution (about 5 %) in acetone toluene and ethyl alcohol for strengthening the wooden pieces of the box and preserving them.

(2) A paste of an aqueous solution of animal white lead glue was used for fixing the different levers to the other broken pieces.

#### Conclusion

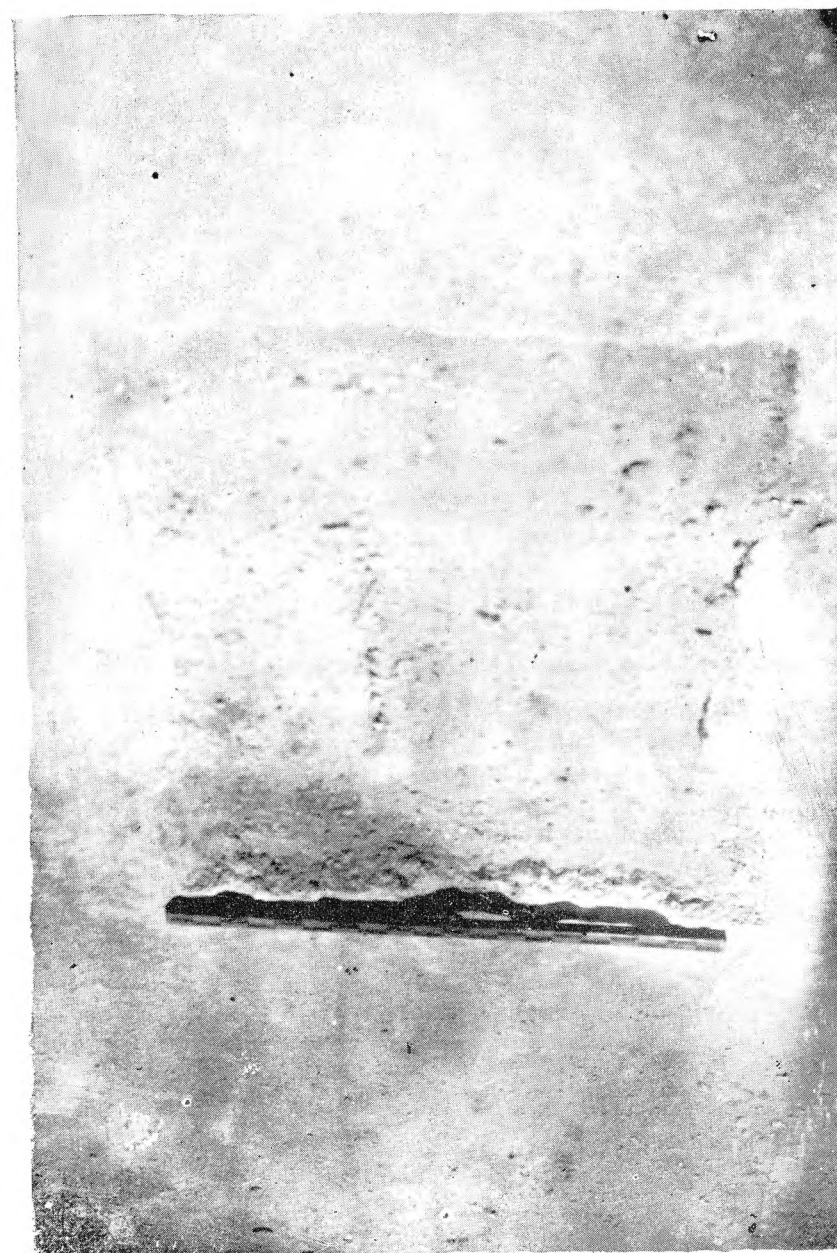
Nothing similar to this antiquity has yet been discovered ; at the moment it is exhibited next to the Cheops Solar boat on the southern side of the first Pyramid. <sup>(1)</sup> At present it stands as an enigma, as no body knows what it represents. Perhaps some one, someday may be able to solve the riddle.

(1) The antiquity is recently transferred to the Egyptian Museum.



The mound of debris, 15 metres high, beside the second pyramid.





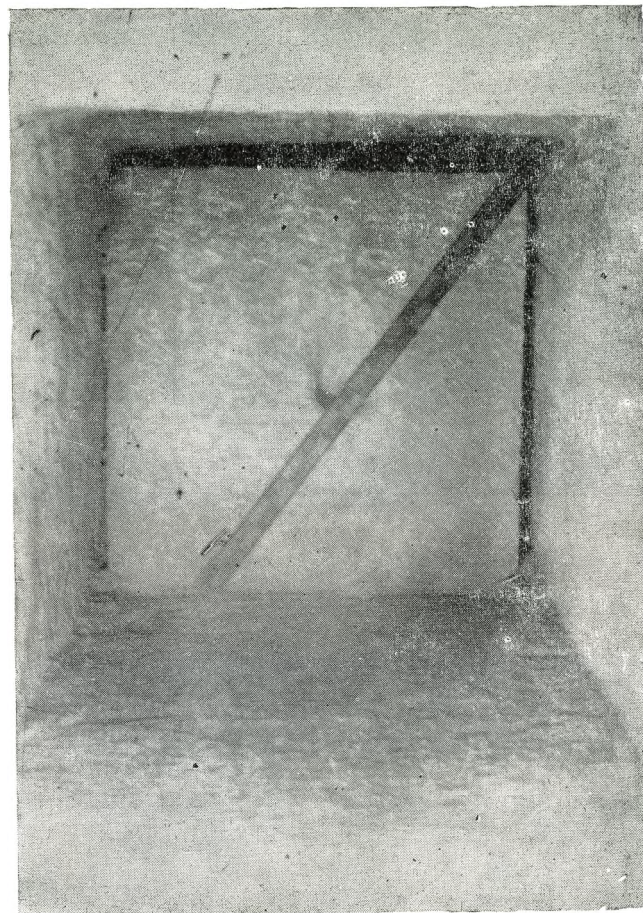
A hewn pit in the rock ; it was full of dirty sand





(a).—A layer of limestone debris appeared.





(*b*).—A large rectangular limestone block appeared closing the whole entrance.





An iron hook was fixed into the block and a thick rope was tied to the hook.





(b).—Moving the block gradually out of the sloping passage





(a).--The hole where the hook was fixed





(b).—The 1st block was placed on one side.





(a).—The site before the removal of the 3rd block





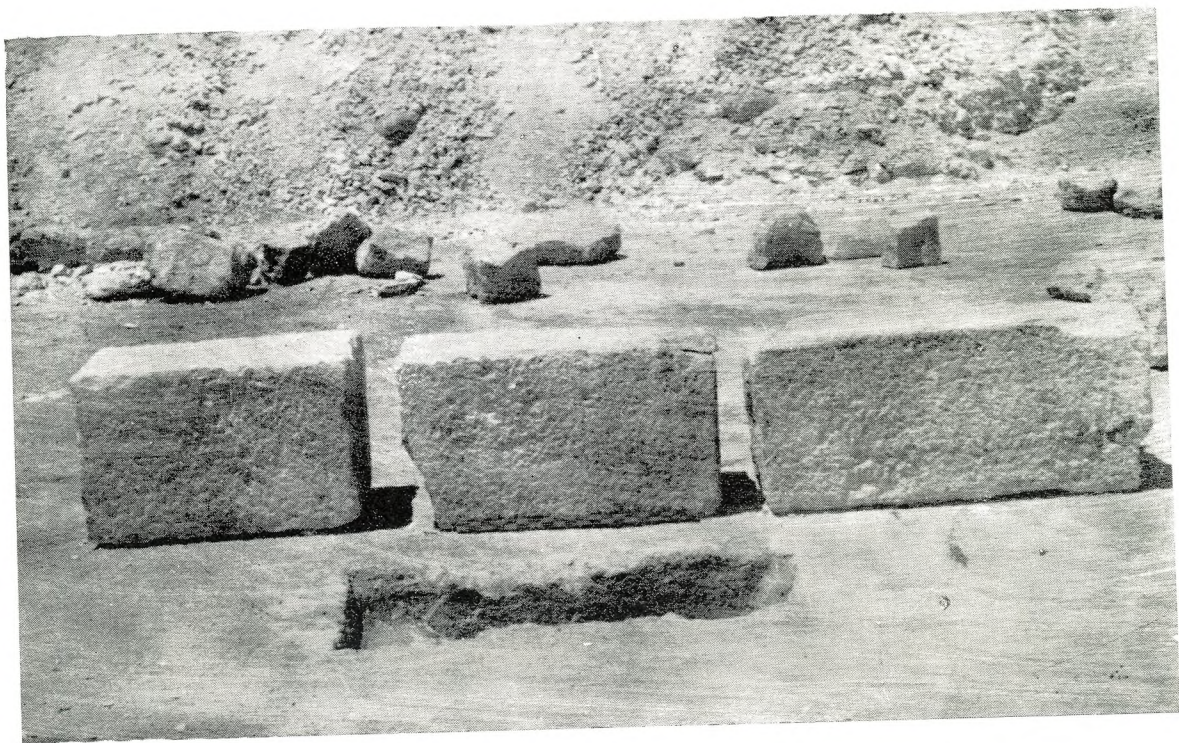
(b).—In the presence of the Minister of Culture (Dr. Sarwat Okasha), workers pulling out the 3rd block.





(a).—The 3rd block was pulled out with extreme care, because it was much heavier than the other two blocks.





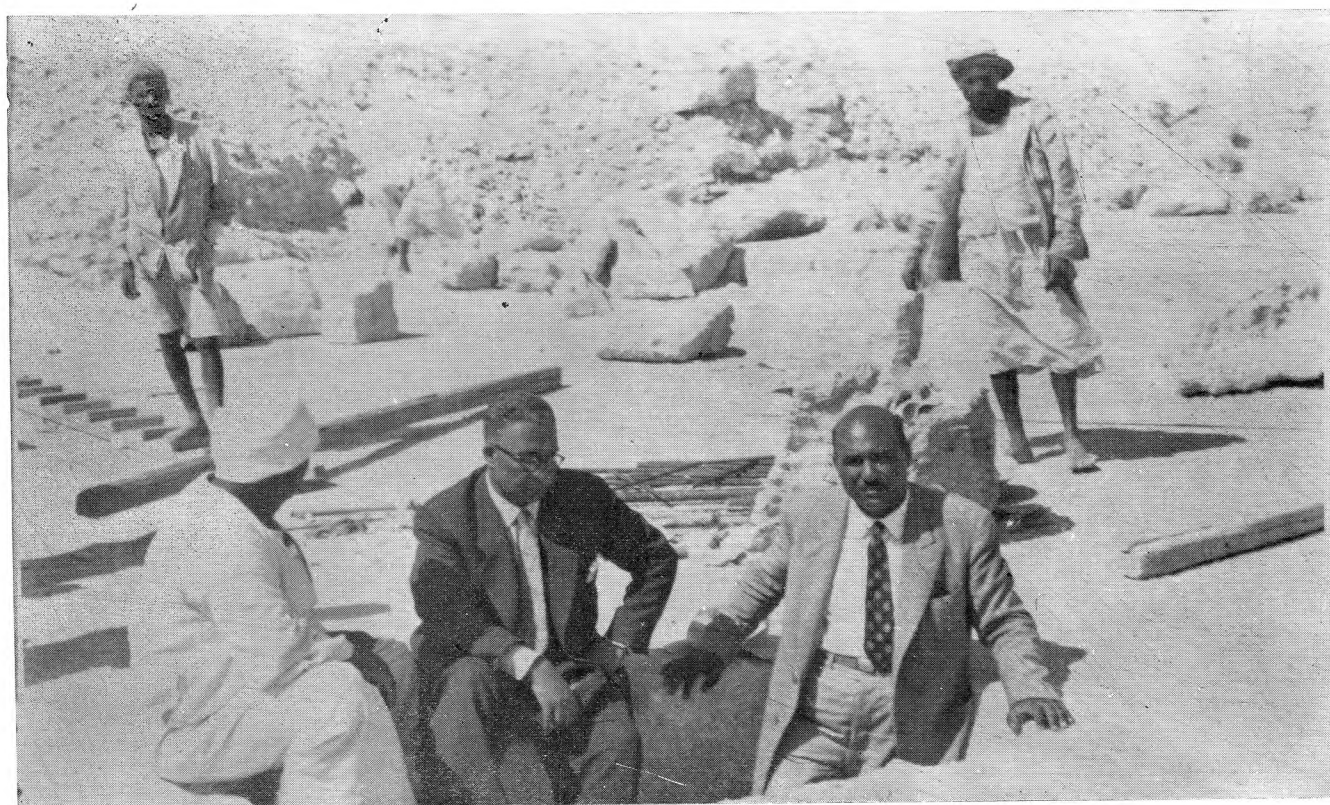
(b).—The 3rd block was put beside the other two blocks by the side of the pit.





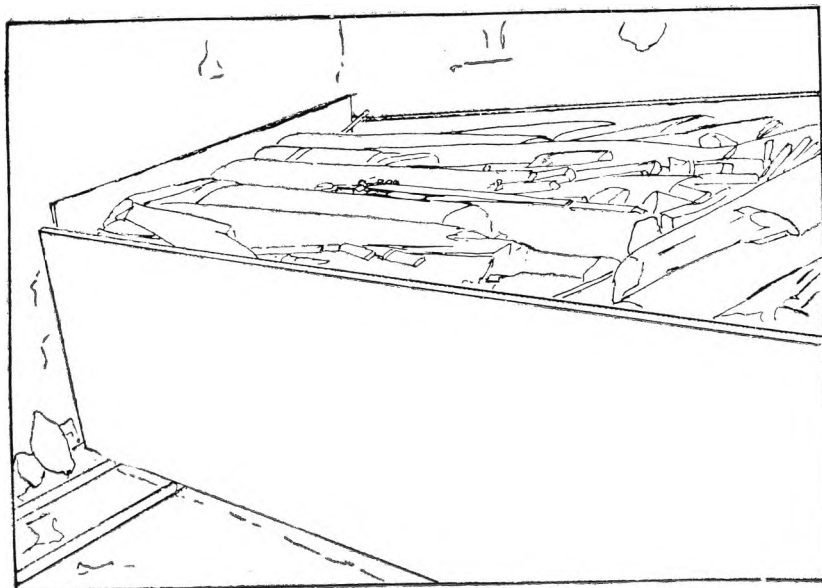
(a).—We were unable to see anything inside the passage, because of the darkness.





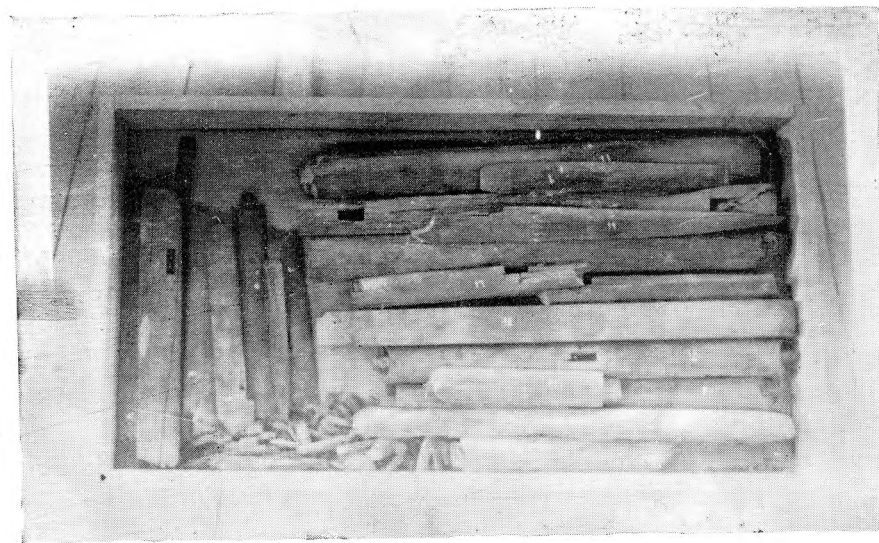
(b).—We used a wooden ladder to descend inside the pit.



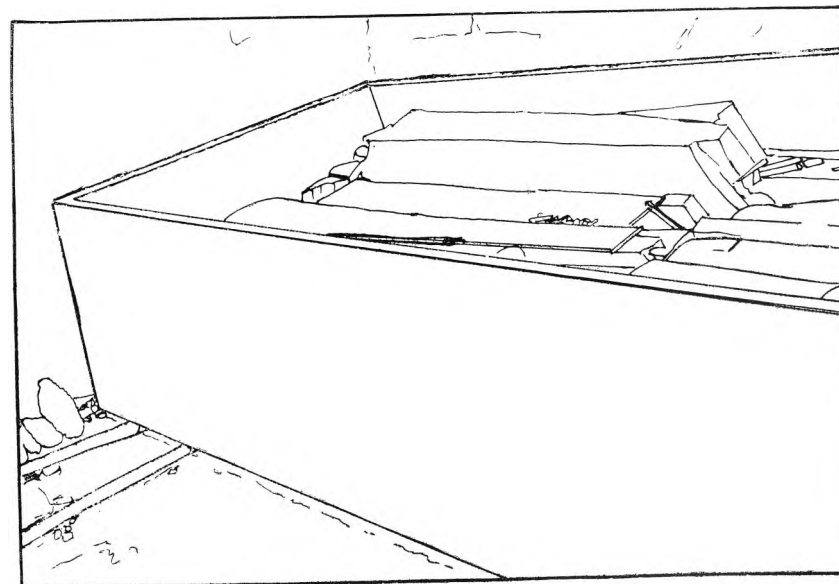


The wooden cylindrical pieces that appeared when removing  
the lid of the box.





(a).—The different pieces of the 1st layer were put in a wooden tray.

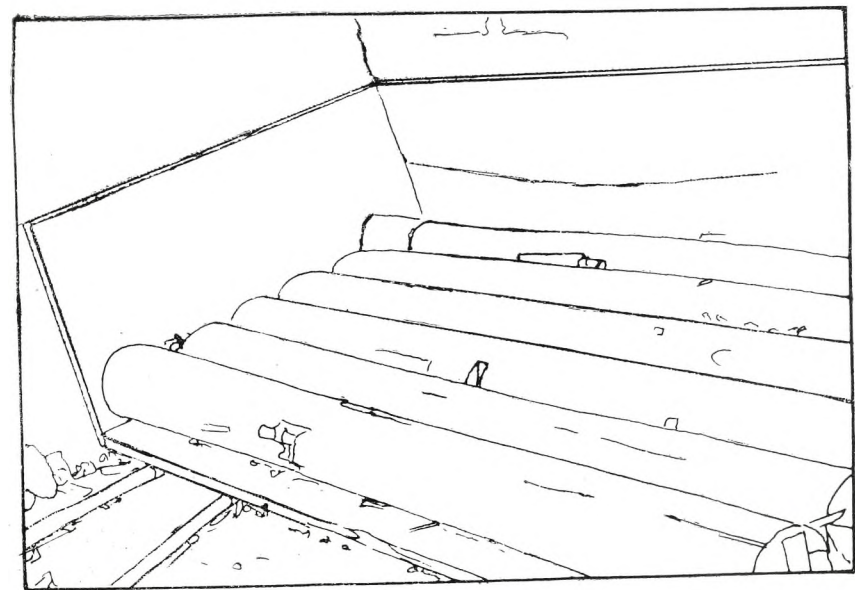


(b).—The second cylindrical wooden layer inside the box.





(a).—The second layer after transferring to the tray - seen are two copper staples fixed to two of the pieces.

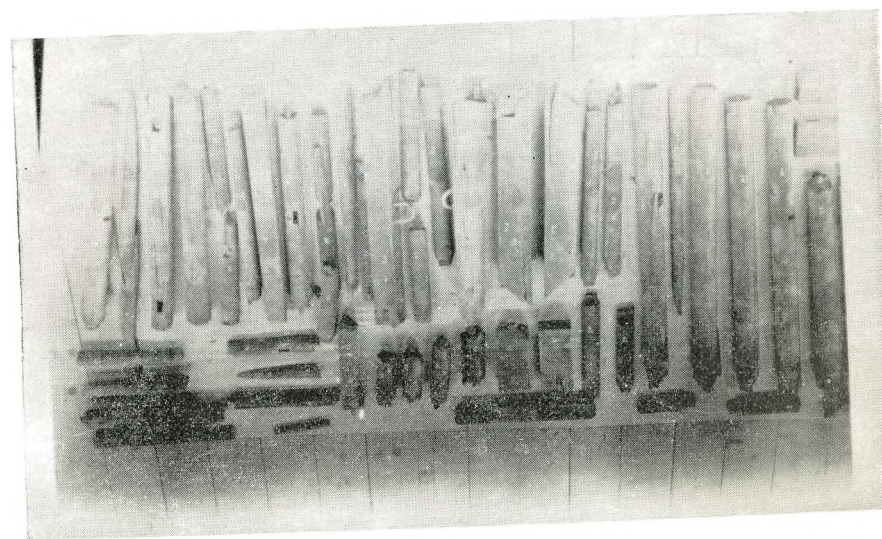


(b).—The 3rd layer at the bottom of the box.



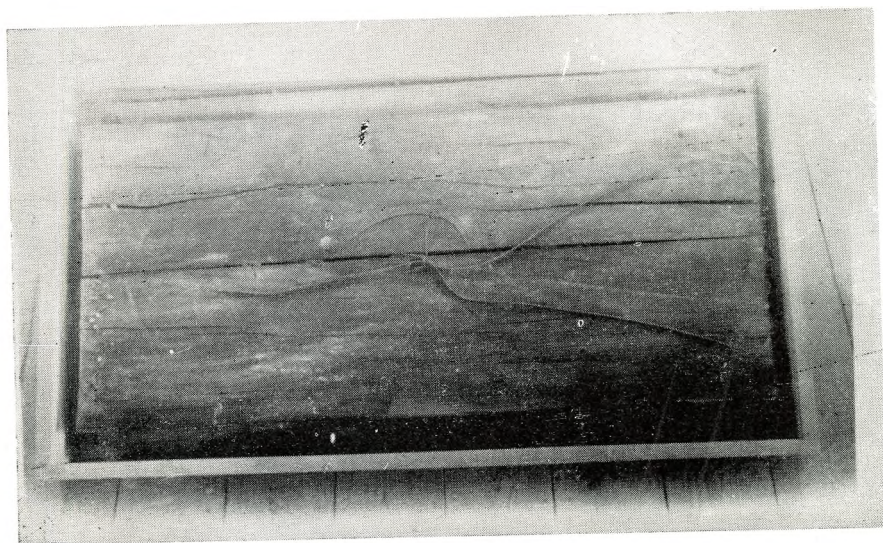


(a).—The wooden pieces of the third layer in the tray.



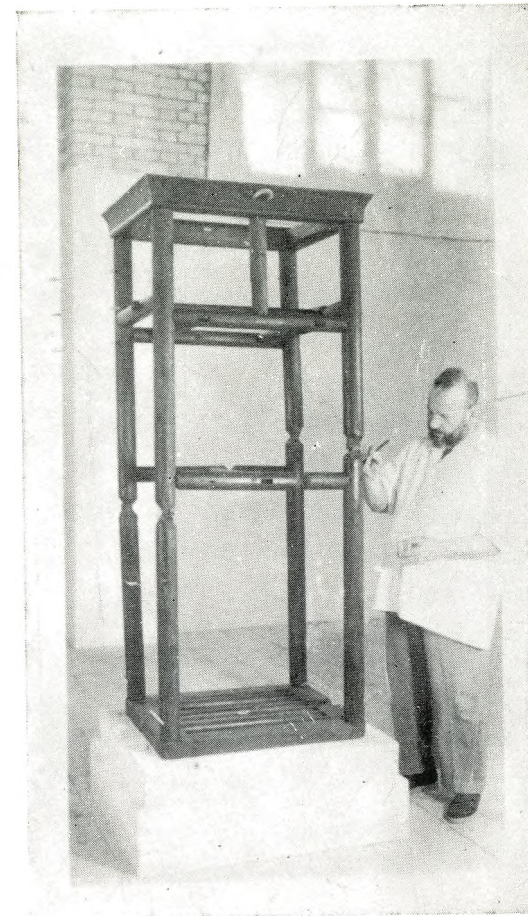
(b).—All the pieces of the three layers were put into a single wide tray





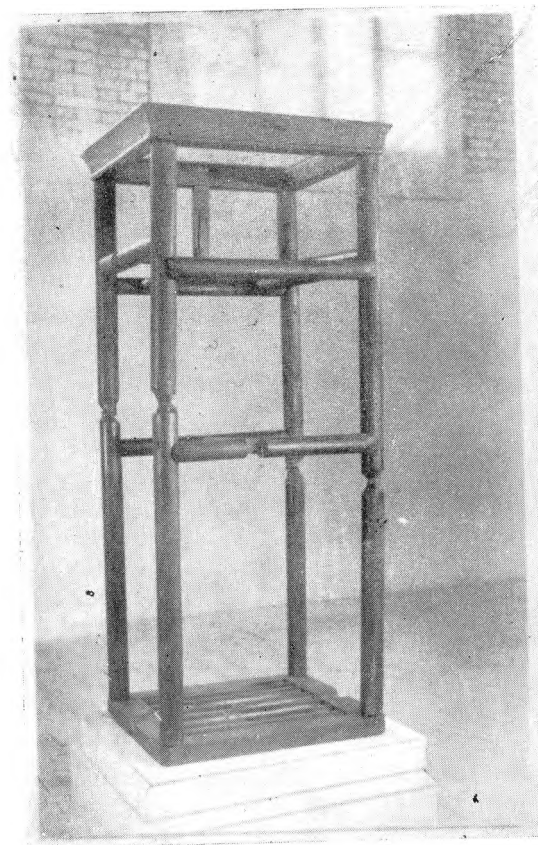
The lid of the box and the cut rope were carefully brought to the laboratory inside another tray.





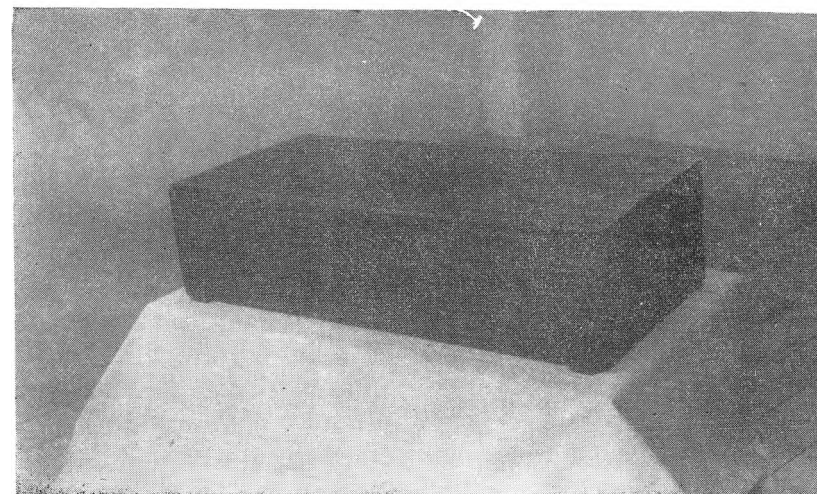
(*a*).—Haji Ahmed Yousef succeeded in restoring the antiquity.





(*b*).—The antiquity after restoration posing the question of its purpose





The wooden box after restoration.



# THE MARCH OF MEDICINE. A DEDICATION TO THE LATE SELIM HASSAN BY A COLLEAGUE

BY  
DR. HASSAN KAMAL

## Pre-Islamic Medicine

### EGYPT

Medical and surgical papyri carried the origin of medicine back to 3200 B.C. Imhotep, the vizier of King Zoser (c 2800 B.C.) emerges in history as the oldest medical figure.

The word "brain" hitherto unknown in any other language is mentioned for the first time in history in ED. Smith papyrus, 2000 years before its appearance in Greek medicine. The gyri are compared with corrugations in metallic slag. Brain injuries are said to disturb the normal control as far as the feet. Facial distortion resulted from suture perforation (Case 7) and Paralysis of feet from compound comminuted fracture of the skull (case 8). Medical schools flourished at Heliopolis, Sais etc. Pharaonic medicine presents us with three prominent physicians i.e. Neterhotep c 2300 B.C., Imhotep c 2800 B.C. & Amenhotep son of Hapu c 1550 B.C. Prescriptions were mostly rational-Castor oil, frankincense, myrrh, Styrax, Colocynth, Juniper acacia, turpentine, beer, milk etc. are few examples. Surgical instruments are exhibited in Cairo museum and are engraved on the temple walls; these include lancets, hooks, probes, pincers etc. Surgery was regarded as a special branch, and surgical books are still extant. The knowledge of anatomy by the ancient Egyptians can be described as advanced. They recognised the cranial bones (Squamae sutures and zygomata), the vertebrae, the sternum, ribs, larynx, trachea, heart, pulse, kidneys, ureters, bladder, thymus. : spinal cord, dura-mater, cerebro-spinal fluid, orbit, sclera, canthi, etc.

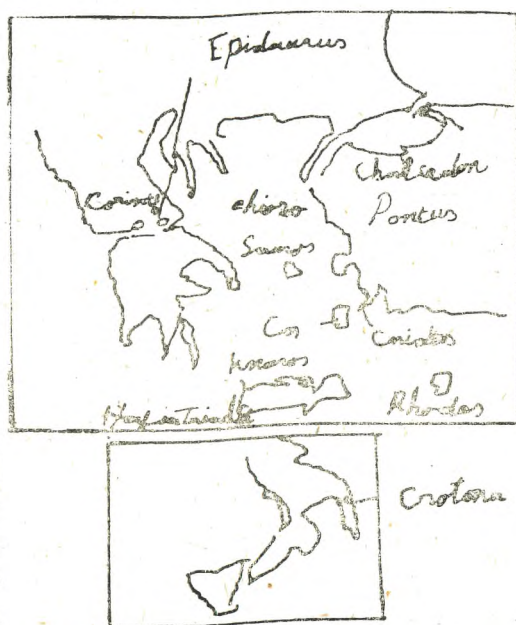
### Relation between Pharaonic and Greek medicine

Egyptian invasion in the South reached the heart of the Sudan. In the East it spread as far as Syria



and Mesopotamia. In the North it included Crete, Cyprus & probably the Greek mainland. Civilization followed invasion and a great deal of Greek medicine was obtained from the ancient Egyptians.

How much in the Greek medicine is a loan from the Nile Valley it is difficult to make out. Kahun Papyrus (c 1900 B.C.) speaks of diseases of women as due to morbid states in the uterus in a very similar manner as that found in the Hippocratic work "demorbus mulierum" - 2nd book. Edwin Smith Surgical Papyrus describes skull injuries, systematically arranged in a way recalling the description in the Hippocratic writing "de capites vulneribus". The symptoms in different organs accompanying affections of stomach (ra-ib) may be compared with those stated by Alexander Trallianus (VII. Chap. 1). The tumour section in Ebers Pap. reminds one of Galens "de tumoribus contra naturum". The Egyptian word (setet) seems to be analogous with Greek (phlegm). Minoan culture (3400-2000 B.C.) was contemporaneous with the early Egyptian Dynasties. The middle Minoan Period corresponds with the Twelfth Egyptian Dynasty (2000-1850 B.C.). The late Minoan Period (1950 - 1400 B.C.) corresponds with the Hyksos period and the New Empire of Egypt and is best represented by the Palaces at Knossos and Hajia Triada in Crete. A golden dish in the Louvre contains inscriptions meaning : "Given as a distinction from king Thutmosis III to the prince and priest who satisfies his king in every country, and the isles in



the midst of the sea, filling the treasury with lapis-lazuli, silver & gold ; the governor of countries, commander of the army, favourite of the king's scribe "Thutiy". It is evident that Thutiy administered Thutmosis Northern Vassal kingdoms.

Greece : Asclepieia were erected at Cos, Epidaurus, Cnidus and Pergamus. Mineral water, massage and inunction were the chief means of treatment. Greek philosophy before Pericles (490 - 429 B.C.) was derived from Egypt, and East, and was also partly Ionian in origin, Pythagoras of Samos (580-489 B.C.) studied in Egypt, whence he probably acquired his doctrine of the mystic power of numbers and the doctrine of transmigration of souls or metempsychosis. He regarded the brain as the central organ of higher activities and founded the Italian school of Philosophers at Crotona. European medicine started with the age of Pericles. Its progress centered in Hippocrates. The medical school at Cnidus was established between 700 & 600 B.C. and was mainly concerned with symptoms as dissociated from the patient. Later on Hippocrates founded the Coan school on Cos (c 460 B.C.) where disease was recognized as the result of natural causes, and where observation of symptoms and their relations to patient and environment were studied and became the foundation of clinical medicine. The humoral theory was postulated here. After 300 B.C. The Hippocratic Collection began to circulate, and in it was thrown everything that could by any device be passed off as of Hippocratic origin. But dubious in its origin the collection had not remained intact as it suffered by accretion and loss. The earliest manuscript of the collection is of the 9th century. The earliest part of the collection was composed in the 5th century and came from the shores of Asia Minor, one or two possibly from Sicily. The collection was highly esteemed by the Arabs who translated most of it. Usaibi'ah said that the collection was made up of thirty books, of these 12 books were scrupulously studied in Islamic Schools; these are (1) On foetus (2) Nature of man

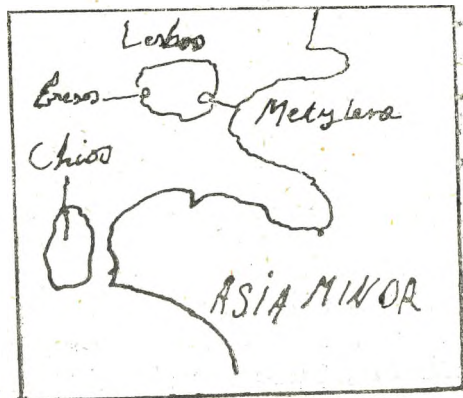


- (3) Airs, waters & places (4) Aphorisms (5) Prognostics  
 (6) Acute diseases regimen (7) Gynecology and obstetrics  
 (8) Epidemics (9) Humours (10) Nutriment (11) Physician's Establishment (12) Fractures.

Appollonius, who lived at Kitium in Cyprus in the first century B.C. wrote an illustrated commentary on the Hippocratic Treatise on Joints which survived in a late manuscript of the 9th century (Florence — Codex Laurentius LXXIV). In it one finds an illustration of Hippocratic practice on reduction of a dislocated mandible which shows much agreement with direction cited in Ed. Smith Papyrus (1550 B.C.) This identity of the surgeon's practice of the first cent. B.C. with the Pharaonic surgeon of 1500 years earlier establishes the existence of a certain amount of old Egyptian influence on Greek medicine. In this fact we see more probability in the recognition of the Egyptian influences suggested above, as having had some effect on the Greek medical investigators, Herophilus and Erasistratos, residing as they did in Egypt, where such influences were obviously possible, (J.H. Breasted in the Edwin Smith Surgical Pap. Vol I, 1940. p. 16-17 in a Dislocation of the mandible).

The Hippocratic Oath forbids criminal practice and disclosure of professional secrets.

Theophrastus of Eresos (370-286 B.C.) the protobotanist did for the vegetable kingdom what Hippocrates did for medicine. The *De Historia Plantarum* of Theophrastus contains descriptions of some 500 different plants.



*Alexandria School of Medicine.* The victories of Alexander disseminated Grecian knowledge; and a school of physicians sprang up at Alexandria called the Emperical School, which observed the effects instead of enquiring after the causes. The two earliest teachers were the greatest—Herophilus of Chalcedon (b. 344 B.C.) and Erasistratos of Chios (3rd cent. B.C.). The former is regarded as the father of anatomy; the latter as the father of physiology. This school became the centre of Greek science on Egyptian soil; and it was a sufficient recommendation for any physician in the Roman Empire to have studied at Alexandria.

*Herophilus* was the first to dissect human body in public. He recognized the brain as the centre of the nervous system and the seat of intelligence; he dissected it and his name still exists in torcular herophili, he distinguished between motor and sensory nerves. Between arteries and veins; and between cerebrum and cerebellum. He described the meninges and the fourth ventricle including the clamus scriptorius, the hyoid bone, the parotid and maxillary glands, the pulmonary artery, the duodenum, ovary, cornua uteri, the seminal vesicle, the prostate, the retina, the vitreous and ciliary body. He counted the pulse with a water-clock and analysed its rate and rythm.

*Erasistratos of Chois (Iulis)* described the aortic and pulmonary valves, the chordae tedinae, the capillary & ramifications of arteries and veins. He regarded the heart as a pump, and digestion as a mechanical process (not a coction). He explained the pathology of angina, pleurisy and dropsy on his idea of hyperaemia.

*Effect of the Aleaxndrian School:* The activities of this school made the following subjects highly appreciated (1) Materia medica (2) Dietetics (3) Anatomy (4) Physiology, and (5) Public health (baths, town - planning etc.).

*Life of Alexandrian School:* The intellectual movement of this centre extended over a period which may be divided into two.i.e. (1) 331 B.C. - 30 B.C. i.e. from the



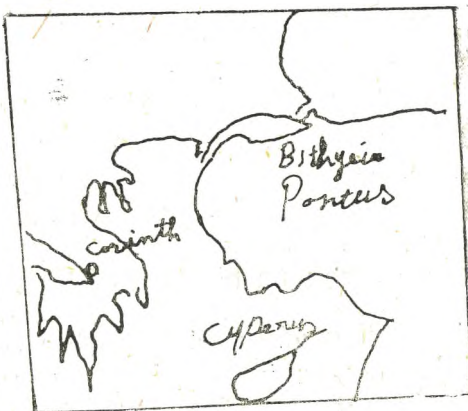
foundation of the ptolemaic reign to final subjugation to Rome (2) 30 B.C. - 642 A.D. - the last being the date of occupation by the Arabs.

Ptolemies Soter (323-285 B.C.). Philadelphus (285-247 B.C.) and Euergetes (247-222 B.C.) drew from Greece to Alexandria eminent men in Medicine, founded the Great Library, and a museum very similar to a modern university. To the last was added Aristotle's library and the Pentateuch (the Septuaginta)

During the last 150 years the city lost its individuality. New literary circles arose in Rhodes, Syria etc. Under Roman rule the influence of the school extended all over the world, but eminent men of letters began to concentrate at Rome. With the advent of Jewish & Christian elements the school drifted from its old direction into speculative and religious philosophy. Syria gradually acquired the Hippocratic doctrine from Egypt, hence the Syrian version of Hippocratic Aphorisms and Galens (De Locis affectis), and became the main link between Greco-Roman medicine on one side and Islamic medicine on the other.

A word may be said here about Mithridates king of Pontus (120-63 B.C.) who achieved a reputation in poisons together with Apollodorus of Alexandria.

After the destruction of Corinth (146 B.C.), Greek medicine may be said to have shifted to Rome.



Rome: Asclepiades of Bithynia (124 B.C.) established Greek medicine in Rome. He attributed disease to constricted or relaxed conditions of solid particles (Solidism) but relied on the Ccan regime i.e. fresh air, light dietetics,

massage, clysters, hydrotherapy and light internal medication. He was the first to treat insanity and to mention tracheotomy. Greek medicine in Rome was characterized by three theories :

- (1) Humoralism: disturbances of the liquids of the body.
- (2) Solidism; disturbances of solids of the body.
- (3) Pneumatism : disturbances of gases of the body.

The pioneers were Celsus, Dioscorides, Rufus, Soranus, Galen and Antyllus.

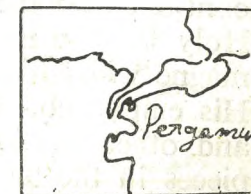
*Aurelius Cornelius Celsus*. Roman physician c 25 A.D. wrote "De medicina" in eight books.

*Dioscorides, Pedanos*. c 50 A.D. Greek. served in Nero's army. His *Materia medica* comprised 600 medicinal plants and many animal products, was very popular in Islam.

*Rufus of Ephesus* : Physician & Anatomist fl. c 50 A.D.

*Soranus of Ephesus* (98-138 A.D.): Practiced first in Alexandria, then in Rome, methodist. Wrote ten treatises on midwifery, diseases of women, fractures etc. He was also a medical historian.

*Galen* c 230-200 A.D. Celebrated Greek Physician and medical writer. Born at Pergamum, Mysia c 130 A.D. Attended at Alexandria School and shifted to Rome. Attended the health of Marcus Aurelius. Died probably in Sicily. Wrote numerous treatises, 98 of them are extant and genuine. Founder of experimental physiology. Frank about his indebtedness to Alexandrian anatomists.



*Antyllus*. Greek physician ; fl. 3rd or 4th cent. A.D. Removed cataract by extraction and suction. Treated aneurysm by applying two ligatures and cutting between them.



*Roman Public Health*: This comprised (a) A definite Public Medical Service (b) A military medical system. (c) A hospital system connected with the military system (d) Valetudinaria (infirmaries) for the sick that became the foundation of medieval hospitals (e) Spitals for travellers and pilgrims along strategic roads (f) Warm Public baths (therma) (g) use of mineral springs (h) Central heating (100 B.C.) (i) Cremation (j) Town planning (k) ventilated houses (l) Paved streets (m) Great Aqueducts (n) Sewers and Drains (o) Purity of Food.

*The Byzantine Period* (746-732 A.D.) ; The Western Empire lasted c 500 years, the Eastern Empire lasted over 1000 years (395-1453 A.D.)

Decline began with the death of Marcus Aurelius. Commodus, his son, was killed by the soldiers who afterwards nominated emperors. Barbarian menace increased. Claudian & Diocletian tried to save the Empire. In 323 A.D. Constantine the Great moved the Capital from Rome to Byzantium, there being one ruler in the East and another in the West.

In 410 Italy was overrun, and Rome was sacked by Alaris.

In 434 The Roman Empire ceased to exist. It was continued by the Byzantine and Medieval Empires (The Holy Roman Empire). This last was created by Charlemagne who believed himself successor of August Caesar. His empire consisted of France, Germany, part of Italy and other parts. After his death, this empire fell to pieces in the 9th & 10th centuries.

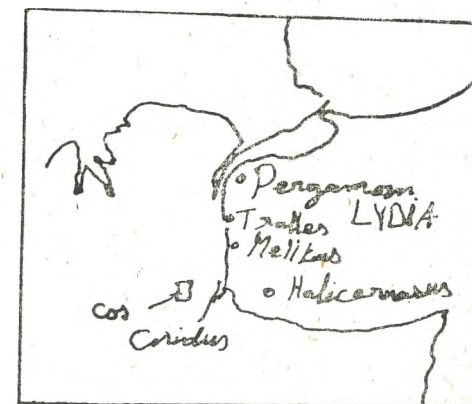
The causes of the downfall of the Roman Empire are many. The Roman soldier became an easy prey to the invading barbarians of the North. A virulent pestilence started in China and spread through Asia into Europe raging through the Roman Empire from A.D. 164-180 and decimating garrisons and population. The barbarians appeared to be immune to the pestilence which was probably malaria. Some say that these

barbarians were of Mongrel origin. The frontiers became vulnerable. The nomads of Asian steppes pressed southwards and westwards. Meanwhile from Sweden came the Goths migrating to the Volga and the Black Sea, using ships upon the warm waters to the Mediterranean shores. They in turn felt the pressure of the Huns of Asia. Goths and Visigoths pressed westward to destroy the Roman Empire, and the Western civilization entered upon a period of a thousand years of darkness. Wealth accumulated and men decayed and the Roman could not hold his own with the wily Greek and more subtle and dextrous Arab. Luxury and dissipation weakened his fibre. Mysticism and magic paved the way for dogmatism and mental inertia.

Degradation of intelligence was pronounced in the Eastern Empire. Science retrogressed. Intellectual energy was dissipated in religious controversy.

Talismans, incantations and spells took the place of medicine. Byzantine medical history was chiefly concerned with four compilers : (1) Oribasius (2) Aetius (3) Alexander of Tralles (4) Paul of Aegina.

*Oribasius* : (325-403 A.D.). A celebrated physician born at Pergamos. A physician to the Emperor Julian; Wrote "Medicinalia Collecta" in 70 books chiefly from Galen and others.



*Aetius* (6th Cent. A.D.): A Greek medical writer, author of the Tetrabiblon—a medical work of 16 books. Royal physician to Justinian I (527-565). The Tetrabiblon contains information about Rufus of Ephesus (c50 A.D.), Leonides in surgery, and Soranus (98-138 A.D.).



in gynecology and obstetrics; described a diphtheria epidemic with palatal paralysis. He wrote soundly on diseases of the eye, ear, nose, throat and teeth. He also wrote on goitre, hydrophobia, elephantiasis, ileus, headache, pneumonia, pleurisy and epilepsy. Described Ligation of brachial artery above aneurysm.

*Alexander of Tralles* (525-605). A medical writer from Lydia. Practiced in Rome. Wrote 12 books upon pathology and therapeutics of internal diseases. Brother of the architect of St. Sophia of Constantinople. Travelled much and finally settled in Rome. His *Practica* was printed in Lyons in 1504. He gave good accounts on insanity, gout, dysentery, cholera, helminths and vermifuges. The first to mention rhubarb, and to recommend colchicum in gout.

*Paul of Aegina* (625-690) : Celebrated Greek medical writer. Practiced in Alexandria during the first half of the seventh century. Distinguished as surgeon and obstetrician. He wrote his *Epitoma of Medicine*, printed by Aldine Press at Venice 1528 & 1553. His *Epitome* deals with surgery and was the standard work to the time of Abulcasis; gave original descriptions of Lithotomy, trephining, tonsillectomy, paracentesis, amputation of breast and opening chest for empyema. Gave full account of eye-surgery. His authority was upheld by the Arabs.

#### Islamic Medicine

*The Great Prophet, Muhammad* (Mohammed, Mahomet) c 571-632. The preacher of Islam. Posthumous child, his father Abdullah was a member of the tribe of Quraish, his mother Amina lived on till his seventh year. Socially speaking he was a thorough example of child-welfare. On her death his grand-father Abdul-Muttalib took charge of him; and on his death at the end of one year he was adopted by his uncle Abu-Talib. In his childhood he was thoughtful and spent his early life in tending sheep. He had no education, could neither read nor write, but on receiving a heavenly order became able to read. The order is mentioned in the glorious Koran.

Until 26 he worked hard to live, regarding work as honour and advising others to follow suit. In the 26th year he married a wealthy widow named Khadiga, a lady of good sense. She is highly esteemed by the Moslems. She was the first to embrace Islam. Many people name their daughters after her.

His first revelation came in a cave in mount Hira' where he used to retire for meditation. This was followed by visions and ecstasies. The new doctrine was thus formulated : "No God but Allah & Muhammed is the apostle of Allah" The Arabs soon held monotheism and absolute submission to God, practiced asceticism and meditation. From the first his faithful wife, his friend Abu-Bakr and his adopted slave embraced Islam. The revelations formed the Koran; The followers were called muslims (moslems). As the wrath of Meccans rose, it became time to move to Yathrib (Madina). This removal was called the Hijra and is said to have taken place on the 22nd of September 622, from which muslim chronology dates as A.H.I. (i.e. year 1 after Hijra). Soon after the Hijra Muhammads, role as an Apostle, as a statesman, as a law giver and as a soldier became an acknowledged fact. The first mosque was built at Madina. Friday became a sacred day. The fasting of Ramadan month was enforced. Campaigns started at Badr on the 17th of Ramadan (624 A.D.). In 630 Mecca surrendered. In one year the Moslem army rose from 1000 to 3000. Victory followed victory. The Islamic army was indefatigable. It is said that the Prophet died on the 7th or 8th June 632 of some fever and was buried in the spot where he died in Madina. The death happened two years after his triumphant entry into Mecca. He then made his last pilgrimage, delivered his last discourse, and fell ill. After the prophet's death the title Caliph was first borne by Abu-Baker. The history of the Caliphs may be divided into three epochs (1) The Epoch of the first four caliphs immediately succeeding the Prophet, (2) The Omayyed Epoch & (3) The Abbasid Epoch.



*The Koran* : The Holy Book of Islam. Full of knowledge and information; it contains many sound hygienic regulations and sanitary orders. The welfare of the mother and child is well regulated. Care of the foetus, nursing, wet-nursing and weaning together with maternal welfare are insisted upon. Orphans and poor are well treated. Every person is responsible by the word of the Koran, for the care of his senses in particular. Exposed parts of the body (face, hair, forearms, feet, nose, eyes & ears) are washed five times daily. Urethral orifice & anus are also washed after use. Prayers include all articular movements five times daily. The words uttered in prayers have a highly sedative effect so the Koran says. Fasting for a month from sun-rise daily is social and hygienic. Pilgrims should bathe, change clothes, cut their hair and nails. Such acts prevent spread of infection.

Diatetics are an important item. Ripe and clean food is recommended—(c.f. the Seven Sleepers account). Wheat, honey, oils, milk and fruit (e.g. dates, figs, grapes etc) are praised for their nutritive value. Alcoholic drinks are not allowed. Bathing is obligatory after sexual act. Cleanliness is essential in Islam. Alms-giving is compulsory.

*Prophetic Traditions* (Hadith) on hygiene and sanitation are full of valuable information. Every husband is responsible for the welfare of his wife, children and subordinates. The wife is responsible for her husband's wealth. Thrift pleases Allah. Clean water, clean food, clean clothes and clean houses are clearly demanded. Cleanliness of streets & public places is obligatory. Leprosy & plague patients are secluded. Medical treatment is an order. There was a doctor for the Prophet, and He advised consultation of physicians. Learning is very near compulsory. The choice of a wife is recommended, there being some undesired hereditary conditions. Parasites are abhorred. Socialism was ideal. Social reform demanded good health and good education in key-positions.

Justice is supreme. Politeness towards women occupied an important section in the Prophets farewell discourse at Mecca. Prevention of cruelty to animals is an order. A woman is said to have gone to hell for killing a cat by hunger.

### The Medical School of Jundishapur

Occultism and mysticism lowered the scientific standard of the Alexandrian school, and Egypt failed to be productive of pure medical knowledge. It was Syria's turn to take over the lead.

The Nestorians in Constantinople, condemned in 431 A.D. as heretical fled to Edessa, and in 489 migrated to Persia where they started a medical school in Jundishapur. There, the Persian monarch founded a hospital and an academy which flourished during Chosroes Nushirwan's reign. Shortly before, some of Galen's works were translated into Syriac. In Jundishapur met the sages of Greece, Syria, Persia and India. Many Greek books were translated into Persian and Syriac; and many Sanskrit books were translated into Pahlavi and other languages.

Shortly before Islam, a priest in Alexandria called Ahron wrote pandects on Greek medicine, these were soon translated into Syriac and Arabic. At that time many Greek books on medicine, veterinary med., chemistry, agriculture etc. were translated into Syriac. Jundishapur continued to be the intellectual centre during the reign of the first four caliphs and the Umayyad caliphate (661-749).

The Abbasids began to rule 750. Jundishapur continued to supply the Abbasid caliphs with medical experts; and among such Caliphs were Al-Hadi (d. 786) and Harun Ar-rashid (d. 809).

*Translation of Scientific Books* into Arabic reached its zenith in the Xth Century; and an Institute of Translation was created in Baghdad by Caliph Al-Mansur (813-33). There Hunayn ibn Ishaq and others dominated the scene,



and compositions and translations were issued. The ten treatises on the Eye is one of Hunayn's compilations. Hubaysh & his son Ishaq (d. 910), Thabit ibn Qurra (805-901) and Qusta ibn Luqa (Constantine son of Luke c 900) were among the salient members in that institute.

The Arabs of the tenth & eleventh centuries emancipated their scientific efforts from dependency on foreign research. Objection to dissection of human bodies was overcome by dissection of apes, and the treatises of that period revealed remarkable knowledge on anatomy and physiology. Encyclopaedias and exhaustive manuals abounded. This "Golden Age" literature found its way into Europe as early as the eleventh century, mainly through Spain (Andalusia), Salerno (in Italy) and the Crusades. The school of Salerno was founded at the beginning of the VIII century by Arabian professors (c.f. Campel, Arabian medicine p. 115). The famous translation centre of Toledo (XIIth century) shared in distributing Arabic knowledge in Europe. This was followed by the great universities in medieval Italy, Germany, England and France, where much of Arabic medicine was practiced until the end of the XVIIIth century.

It is estimated that Baghdad alone contained over 800 medical men. Diplomas (Arabic Ijazahs) were granted authorising medical practice. Specialisation was well established. Oculists, surgeons, gynecologists and orthopaedists were numerous. Pharmacies flourished; a public inspector (muhtasib) supervised all these technical activities. Professional secrecy, medical and surgical instruments, and handling of poisons and induction of abortion were guarded by regulations.

#### Leading men

Mighty creeds breed mighty brains, and it is only natural to find gifted men all over Islamic Dominions from the Persian Gulf to the shores of the Atlantic. Fifteen examples of these are given here.

1. *Al-Kindi* Fl. IXth century; the philosopher of the Arabs. Born at Kufa, wrote about 265 books — 15 on meteorology, several others on specific weights, optics, tides & music.

2. *Muhammad, Ahmad and Hassan—Sons of Musa Shaker* c 860 wrote a book on artifices e.g. vessels for warm & cold waters, water—wells with a fixed level, elevation of water, water wheels, balances and water—clocks

3. *Al-Asmai of Basra* (740—828). Born in Basra. Harun Ar—rashid entrusted him with the education of his son (later Caliph) al—Amin. An infallible authority. Wrote several treatises on the horse, camel, wild animals, plants (trees, vines & palm trees) and on the making of man.

4. *Abulcasis* (Abul Qasim al Zahrawi). c 1013 b. at Cordova. His book on surgery (*Al Tasrif*) was translated into many languages and studied for several centuries.

5. *Ibn Al-Baytar* - (d. 1248) An Arab botanist and pharmacist. Wrote the first medical treatise on Material Medica which maintained a place of honour for about 500 years at European Universities.

6. *Al-Hazen* (Ibn-al-Haitham) c 965-1039 An Arabic optician. b. Basra. He was also a mathematician, physicist and astronomer. Left for Court of Caliph al-Hakim in Cairo. Copied manuscripts for the library of Dar-al Hikmah (Hall of Wisdom) founded by Al-Hakim. Left over a hundred books on mathematics, astronomy, philosophy, optics and medicine. His book *Kitab-al-Manazir* on optics, published in Latin in 1572. influenced the development of science in middle ages from the time of Roger Bacon (1213) down to Johannes Kepler (1570).

7. *Avempace* (Ibn-Bajah) d. 1138. b. Saragossa, Spain. Wrote books on astronomy, medicine and a philosophical treatise on psychology (conduct) that influenced Averroes (Ibn-Rushd).

8. *Avenzoar* (Ibn-Zuhr) : c 1091-1162. b. Seville, Spain. An eminent physician who protested against quackery & Superstitions. Taught Averroes.



9. *Averroes* (Ibn-Rushd) 1126-1198 Spanish Arabian philosopher and physician b. Cordova. Chief Judge. Wrote on Astronomy, Grammar and Medicine. Had more influence on Jewish and Christian thought than on Arabian.

10. *Avicenna* (Ibn-Sina) 980-1037. Physician and philosopher b. near Bukhara, and studied in it. Received court position moved to Khiva. Vizier at Hamadan. Wrote about 100 books, the greatest being the Canon—a highly esteemed system of medicine. Translated into Latin in 12th cent. first by Gerard of Cremona, thereafter into several languages. His philosophy is Aristotelian but included Neo-platonic ideas.

11. *Rhazes* (Al-Razi) 850-923 b. Ray, Persia. Mohammedan physician. Chief physician in Great Baghdad Hospital. Wrote over 140 medical works including *Continens* (Al-Hawi) in 10-books, translated into Latin c̄ 1485. This book had great influence on medical science in Middle Ages.

12. *Ibn Nafis*. Dean of Qalawun Hospital Cairo. Studied and died in Damascus 1288-9. Wrote his *Sharh Tashrih al-Qanun* (Annotation on Canon). Held a clear idea on Pulmonary circulation, three centuries before Spanish Servetus, who is credited with this discovery. A careful study of his writings showed he also knew the peripheral circulation.

13. *Hunayn Ibn Ishaq* 809-877. Wrote the ten Treatises on the Eye, studied by Max Meyerhof in 1928. Here is a specimen paragraph:— “The affections of the muscles and the nerves are two: one is called paralysis i.e. laming. the other spasmos i.e. cramp. Paralysis is of three kinds, one such that perception alone ceases, another such that motion alone ceases, and the third such that both of them cease. When the visual perception ceases, or is diminished without the existence of an external eye disease, this may be caused either by an affection of the optic nerve, or by the fact that the brain does not send through it a large amount of visual spirit”. c.f. 71.

14. *Geber* (*Jabir Ibn Hayyan*) an alchemist (c̄780). The father of Arabic Alchemy, wrote about 100 books and influenced the whole course of European chemistry. He wrote on evaporation, filtration, melting, sublimation, distillation and crystallization. Many of his works were translated into latin.

15. *Haly Radoan* (Ali Ibn Radwan of Cairo c̄. 1067. Wrote a fine medical topography of Egypt.

*The Decline of Islamic Medicine* began at the end of the XIIth century as a result of change in Caliphate, of internal troubles and of military defeats. Magic and superstitions filtered in, and books of pseudo scientific character began to appear. Maps representing diseases as stars for diagnosis and treatment became popular. Toledo, Baghdad, Cairo & Damascus fell and Islamic medicine waned in oblivion.

### The Spread of Islam

Before Islamic epoch, there was practically no dealing between the East Roman Empire and Arabia. The Empire never regarded Arabia as a vulnerable state, and consequently there was nothing to fear from it. Prophet Muhammad died in 632, and soon after, the Arabs laid their hands upon a whole section of the Roman Empire.

In 634 they seized the fortress of Bothra (Bosra) in Transjordan. In 635 Damascus fell. In 636 the battle of Yarmuk gave the Arabs the whole of Syria. In c̄ 637 Jerusalem surrendered., Mesopotamia and Persia followed suit. In c̄ 641 the whole of Egypt was taken. The Byzantine possessions in North Africa were overrun. The Arabs soon assimilated themselves to various civilizations with astonishing rapidity.

Islam signifies submission to God., and “Moslem” means “subject.” Monotheism centered in Allah. No propaganda and no pressure were applied by the Arabs as was exerted by the Christians after the triumph of the church.



The Roman became arabinized as soon as he was conquered by Islam. The Koran was substituted for Roman Law, and its language for Greek and Latin. When Christianity was adopted by the Romans, it affected a change of soul. When Islam replaced Christianity the change was in soul and body. Such change was great in civil and religious society. Islam imposed itself upon the entire basin of the Mediterranean.

Arabian fleet of Mo'awiya (660) occupied Cyprus, Rhodes & Crete. It besieged Constantinople.

In 670 'Okba founded Kairawan. In 681 he reached the Atlantic. In 695 Carthage was taken. Musa Ibn-Nosair subdued Morocco. In 711 Tarik crossed the Gibraltar. In 713 Musa proclaimed the sovereignty of the Caliph of Damascus in Toledo. In 725 Carcassone was taken. In 732 Abd-Ar-Rahman crossed the Pyrenes and occupied Bourdeaux. In 732 he was defeated and slain. In 737 The Arabs captured Avignon and reached Lyons; and in 739 the Arabs invaded Provence and threatened the Lombards. Palermo fell in 831; Messina in 843 and Syracuse in 21/5/878. In 789 the Balearics fell. In 802 Bentellaria was seized. In 902 the conquest of Sicily was complete. In 837 Naples appealed for the Arabs. In 839 Bari was captured and the Arabs appeared before Venice. In 846 Rome was threatened by the Moslems and the cathedrals of St. Peter and St. Paul were desecrated, the hold by the Moslems over Italy remained so firm that Pope John VIII (872 - 82) paid tribute to the Arabs. Malta was captured in 869. Castles and walls in the Alps testify till now the rule of Islam there. It is said that certain Swiss names as Gaby and Algaby may be of Arabic origin.

*The spread of Islam East of the Mediterranean.* The Ottoman state appeared in 1300 in Anatolia as a frontier Emirate. Its capital was Bursa 1326. In 1366 the Emirate gained a foothold on Europe and developed into a kingdom with Adrianople as capital. In 1453 Constantinople was captured by Muhammad II, the conqueror, who installed himself astride the

Bosphorus. He became heir to Byzantium and his expanding domain made him the successor of the Arab caliphate; and the inheritance of lands had its effect on the inheritance of ideas. The Ottoman fleet comprised piratical ships. During the reign of Solayman I (1520-1566) the greater part of Hungary was overrun. Rhodes was occupied and Vienna besieged. Islamic rule extended from Baghdad to Budapest, and from Assuan to the Crimea, including the Balkan peninsula and South of Russia. The Black sea, and the sea of Azof became Islamic seas.

In India, the descendants of Mahmud of Ghazna, who subjugated the Punjab, introduced Islam into the heart of India; his successors advanced further, Mohammadanism into Decca in Southern India.

In the tenth century Islamic merchants introduced Islam in Indonesia, Muslim states were founded on Sumatra, and Islam spread peacefully via Malacca to Java. In the 16th century, Islam reached China and the Philippines. At that time the Spaniards crossed the Pacific to conquer the northern islands to name them after their king Philip. Here Islam came into contact with Christianity

Innumerable Muslim Indonesians came and are still coming to Medina and Cairo and Mecca to deepen their religious knowledge.

Buddhist and Hindu Sanctuaries were abandoned and fell into decay, and minarets arose everywhere.

#### Religious Distribution of world Population

Islam	15%	Buddhism	11%
Christianity	35%	Confucianism	11%
Hindunism	12%	Other religions	16%

#### The Rise of Medicine after Islam

In the Middle of the XIXth Century medicine began to awake in the East. The first Faculty of medicine of



Cairo Started in early 19th cent. The Ottoman government founded in 1900 a Turkish Med. School in Beirut. Later on medical faculties were erected in Alexandria, Assiut, Tanta, Mansura, Damascus, Libya & Khartum. A Faculty of Medicine was established recently in the Al-Azher University and another in Baghdad. An American and a French medical Colleges were founded in Beirut. Women graduates are increasing by thousands, while many others are trained at occidental universities. Islamic books in Constantinople, Baghdad, Cairo, Escorial, India etc. are studied with zealously and scrutiny.

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## THE PERSISTENCE AND SPREAD OF SOME OBSTETRIC CONCEPTS HELD IN ANCIENT EGYPT\*

BY

P. GHALIOUNGUI

Man's imagination and curiosity have, at all epochs, been aroused and challenged by the perils of birth and delivery and the emotional overtones of sex. On the other hand, old matrons, turning to good account their personal experience had the importance of multiplication to primitive societies, played upon the jealousy of males and prudery of females to monopolize the practice of gynaecology and midwifery, thus removing it from the reach of scientific medicine and petrifying its lore. As a result, many old concepts, in spite of their phantastic nature, have lingered unduly with us, and made of obstetrics a most fertile field of quackery and superstition.

The entry of women in this field did not go unresisted. According to Leclerc (1), women, disinclined to uncover to physicians their secret diseases, were compelled to seek the help of other women in whom they could confide. This met in Greece with great opposition, and an Ancient Athenian law forbade slaves and women to meddle with medicine; but it is told that certain Athenian ladies, having preferred death to delivery by men, one of them, called Agnodice, who had learnt medicine and the art of delivery from a Herophiles, disguised herself into a man to help her fellow women. This having been discovered, the Athenians had to pass a law that allowed ladies of condition to study medicine.

Nevertheless, even in the European sixteenth century, midwives were so often accused of sorcery that the Church

\* The following abbreviations are used in this paper: *Eb.* The Ebers papyrus (7); *H.* The Hearst papyrus (9); *K.* The Kahun papyrus (35); *S.S.* Susruta Samhita (42).



had to exercise a severe control over their activities, ministering to them oaths not to practise witchcraft, under the then terrible threat of excommunication <sup>(2)</sup>.

The obstetric activity of lay women in ancient Egypt is attested by some non medical documents, like the Westcar tale <sup>(3)</sup>, and the carvings in the "mammisi". The Bible (Ex. I, 15) mentions by name at least two Hebrew midwives practising in Egypt; but there are no known physicians (*swnw*) that specialised in gynaecology or obstetrics, as they did in ophthalmology or dentistry, in spite of the fact that there existed lady physicians <sup>(4)</sup>.

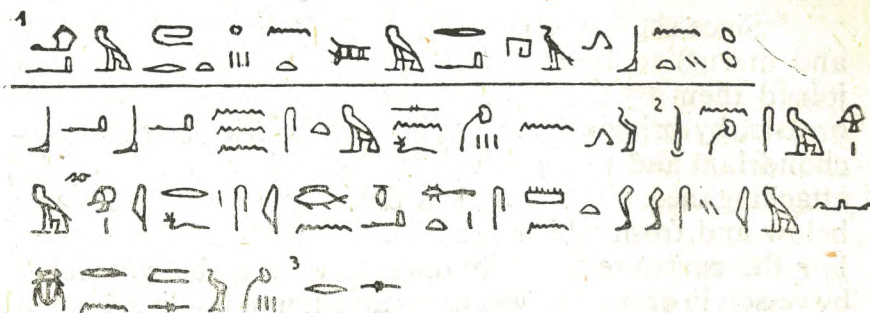
In that primitive and maternal set up, the practice and knowledge of gynaecology and obstetrics became a mixture of sober empiricism and magico-religious practices; but, because the available medical papyri cannot claim to be genuine medical works, it is difficult to say today whether both disciplines were practised by the same physicians. Our concern, however, is the favour that some of these recipes, whatever their nature, enjoyed with neighbouring and successive civilizations.

### The properties of menstrual or genital blood

Amenorrhoea is nowhere mentioned in relation to pregnancy, but the Egyptians, unlike many primitive populations where continuous pregnancy and the resultant amenorrhoea mask this relation, did not ignore its meaning: in many texts the duration of pregnancy is correctly stated <sup>(5)</sup>, and the learned Djeddi accurately prophesied in the Westcar tale <sup>(3)</sup> the date of delivery of Reddjedi. The concept was thus born that retention of the menstrual discharge is somehow connected to the creation or nurture of the foetus, with the consequent attribution, in several texts, of vital properties to this blood.

As an example, H. 156 <sup>(6)</sup> recommends the application to hair of blood from the genitals of a greyhound bitch; Eb. 460 <sup>(7)</sup>, also a capillary application, prescribes the vulva of the same animal, possibly, according to Grapow <sup>(8)</sup>, its menstrual blood. The third, Eb. 808,

is more interesting. It was translated differently by Ebbell <sup>(9)</sup> and Grapow <sup>(10)</sup>:



*Ebbell*: The beginning of remedies not to allow a miscarriage to go down, that which overflows her with blood: let her menstruation come in its beginning, and her belly and her thighs are rubbed therewith; abortion does not happen to her.

*Grapow*: Anfang von den Heilmitteln für das Nicht zulassen, dass die beiden Brüste herabsinken. Sie (die Brüste) werden (*bn. tj*) begossen (*b° b°*) mit dem Blut einer, deren & Menstruation begonnen hat es; werde ihr Bauch, ihre beiden Oberschenkel damit bestrichen; nicht kann *gs. w* gegen sie (die Frau) entstehen.

*Translation*: "Beginning of remedies not to allow that both breasts fall down. They are smeared with the blood of one whose menstruation has just begun; her belly and both her thighs are rubbed therewith; overflow (?) cannot happen to her."

Concerning the latter translation, the supposition of a connection between the uterus (and its blood supply) and the breasts (and their blood supply) is explicit in several Hippocratic writings:

"Milk is akin to the menses when the eighth month is gone and the nutriment passes over (to the breasts)" <sup>(11)</sup>.

"If a pregnant woman's breasts suddenly become withered, she miscarriages" <sup>(12)</sup>

"If milk flows freely from the breasts of a pregnant woman, it is an indication that the foetus will be weak" <sup>(13)</sup>



As usual, Galen had a ready explanation for that reciprocal relation <sup>(14)</sup> :

“Since she (nature) prepared both these parts (breasts and uterus) to be of service in a single work, she has joined them by many of the vessels... (that) go to the breasts, by bringing down veins and arteries to the hypochondrium and to the whole hypogastrium, and then by attaching these to the vessels which come up from the parts below and from which veins extend to the uterus <sup>(15)</sup>. For the parts are the only ones needing to be connected by vessels in order that whenever an embryo is being formed and is growing in the uteri, it alone may be flooded with nutriment from both parts of the common veins, and in order that when the child has been born, all the nutriment may in turn flow to the breasts.”

As a result, the faetus is said to be weak if the breasts secrete milk “because of course all the surplus left in the veins by a weak faetus unable to attract enough to nourish itself suitably, rises to the breasts” <sup>(14)</sup>.

A similar reciprocity is evidently surmised by Celsus who, in the 1st century B.C. advised treating excessive menstruation by cupping the inguinal region and the breasts <sup>(16)</sup>, and by Arab physicians whose Prince, Avicenna, advised anointing the breasts with the blood of a (male) pig's genitals to keep the breasts upright (Canon, lib. III, fen 12), and taught that the menstrual blood in pregnant women is divided into three parts, one of which goes to nourishment, one rises to the breast, and one is kept to be gotten rid of at the puerperium (lib. III, fen 21, 1). As to the sharing by womb and breast of connecting vessels, he wrote :” ... this is a fact that I have learnt especially from dissection and dissection of vessels (lib. III, fen 12, 2).

Indian scholars did not differ much when they stated: “The blood thus obstructed in its downwards course (by the faetus) ascends upwards ; a part of it accumulates and goes to the formation of the placenta, while the rest ascends higher up and reaches the breasts ; this is the reason why the breasts of a pregnant woman become full and plump <sup>(17)</sup>.

The belief in the special virtues of catamenial blood found its way in Arabic books of popular, science', such as Demiry's 'Great Book of Animals' <sup>(18)</sup> :


“... and if you wish the breasts of a girl to keep upright and not to fall down, take the menstrual blood of the girl at the beginning of her period, and anoint with it the nipples ... this is a marvellous and proven secret.

“... if menstrual blood is taken while warm and liquid and the eye is painted with it, redness, leucoma, and swelling disappear from it.





“If the menstrual blood of a girl, virgin or not, is mixed with old wine and is smeared on to the eyes of a person with leucoma, it cures that person.”

We have recorded elsewhere <sup>(19)</sup> similar practices that are still current among the Beduins of the Sinai Peninsula, who use menstrual blood or aborts to cure female sterility, and among common people elsewhere who use blood lost in labour to cure sterility, and catamenial discharges to cure blepharitis.

### The uterus and placenta

1. The uterus  *hm.t* is determined in hieroglyphic writing by the bi-cornuate animal uterus. This was the shape attributed to it by Aristotle <sup>(20)</sup> who stated that it is always bi-cornuate. Galen went further <sup>(21)</sup> ; he thought that women had two uteri ending in a single neck, and indifferently used the singular or the plural in talking of that viscus, claiming to follow in this Hippocrates and Plato <sup>(22)</sup>.

The *hm.t* is often mentioned in Egyptian literature, but only once in relation to childbearing, the usual term for the location of the faetus being equivalent to “belly”.

2. Another term     (*mw.t rmt*), literally mother of man, cognate with latin ‘matrix’



and Arabic أم الولد (om el weld) would indicate an appreciation of its function. But von Deines<sup>(23)</sup> questioned that translation and suggested that this word meant the placenta. One of her arguments is based on prescription *Eb.* 453 that recommends the *mw.t rmt* of a cat to cure baldness, an impossible and sacrilegious procedure, since one had to kill one of these sacred animals to obtain its uterus.

Arabian medical folklore prescribed the placenta of animals for a variety of conditions, especially for eye diseases (24), but not as a hair remedy. A trial was made about forty years ago to revive the Egyptian practice by using amniotic fluid to restore hair.

3. *The position of the uterus and its mobility.* From various paragraphs of the Ebers papyrus (*Eb.* 789-795) it appears that the uterus was conceived as a freely mobile viscus, capable of causing disease by its peregrinations, and it had then to be attracted back by suitable, often faetid, fumigations :

*Eb.* 789. Remedy to cause a woman's womb to go to its place . . .

*Eb.* 793. Another (for the same condition) : "... dry excrement of men on frankincense and the woman is fumigated therewith".

*Eb.* 795 Another ; "... an ibis of wax is placed on charcoal; let the fume thereof enter into her vulva . . ."

The concept of the mobility of the uterus, possibly derived from the observation of menstrual disturbances associated with uterine prolapse or uterine and ovarian tumours, was acknowledged by Plato who compared that viscus to "an animal that ardently desires to bear young and cannot remain long without fruit; it then moves about the body, obstructing the passage of air, impeding respiration, etc . . . until love by uniting man and woman produces a fruit that is culled as from a tree" (22)

4. *The uterus and 'hysteria'* : The Hippocratic writings are rich in references to these movements and to the symptoms they may cause. The statement is found (25) that if the uterus moves towards the liver the woman loses her voice, clenches her teeth, etc., or that when it approaches the liver or the hypochondrium it causes suffocation, rolling of the eyes . . etc (26).

Celsus (27), the encyclopaedic recorder of Roman medicine in the first century B.C. copied this view and wrote that if the uterus nears the stomach, and when the menses are disturbed, there results a condition of "vehemens malum" similar to epilepsy; although he distinguished clinically between it and epilepsy and avoided calling it hysterical. To stop it, fumigations with faetid substances had to be applied and, thereafter, counter-irritation to the epigastrium.

Aretaeus (28) was even more affirmative when he said that there is nothing more mobile or wandering than the uterus, which he described as an animal inside an animal, that could move towards the sternum, the liver or other viscera, and that would, if it were arrested upwards, cause the woman to suffocate and fall without breathing and without speech. He added that it had two peculiarities of taste: it liked agreeable smells and detested bad ones; bad smells had, therefore, to be applied to the nose, and agreeable odours below.

Soranus (29) accepted this and added nothing.

The meanderings of the uterus were, therefore, supposed to cause a syndrome that the ancient called hysterical : γυναιχί ὑπο ὑστερικῶν ἐνοχλουμένη (30) and ὑστερία ὑστερικῆς πνίγος (31)

Galen, two centuries after Celsus (130-200, 201 A.D.), denied the mobility of the uterus (32) and, in more recent times, Morgagni (1682-1771 A.D.) stressed that Galen did not fall into that error although, he said, many people in his own time (Morgagni's) still believed that the uterus sometimes ascends to the septum transversum (the diaphragm) and even . . . to the fauces (33). Galen, however,



accepted the hysterical (uterine) origin of the syndrome; but, in agreement with his humoral thinking, he attributed it to modification of certain humours by uterine dysfunction, rather than to displacement, e.g. by retention of menses, that he called female sperm. He recognized the possibility of male hysteria that he attributed, likewise, to retention of male sperm.

Lord Brain<sup>(34)</sup>, however, pointed out that the Greeks used the word 'hysterikon' as an adjective meaning "uterine", "pnix hysterike" meaning literally uterine suffocation; and that the word hysteria as the name of a clinical entity was first used only in the 17th century, a time when the "nervous" origin of that condition was slowly being recognized.

Considering the long history of the error attributing that condition to uterine wandering, it is interesting to compare the above statements with some sections of the Kahun papyrus<sup>(35)</sup>, a work that deals exclusively with gynaecological disorders, but that has reached us, unfortunately in a very mutilated state.

K. VIII: Treatment for a woman pained in her neck, her abdomen and her ears, in that she does not hear speech ... it is terrors (spasms, violence?) of the uterus.

K. XI: Treatment for a woman who loves bed; she does not rise, and does not shake it ... it is *amemu* (grippings, spasms?) uteri.

K. XXXIII: To prevent a woman from biting (her tongue?) .....

In the first two prescriptions, deafness, apathy, and (tongue?) biting are ascribed to terrors or spasms of the uterus.

The third does not mention the uterus, but it is found in the middle of an entirely gynaecological treatise and the missing part, no doubt related, like the other two, to the pelvic organs.

Many of these views were endorsed by Avicenna in several passages of the Canon:

"... One of its varieties or of its kind, called suffocation of the uterus, is that when the menses are retained, or when woman's sperm is retained because of her continence, these are subject in her womb to a poisonous transformation and their fumes ascend to the heart and to the brain, and she becomes the subject of epilepsy." And the same, he said, happens to continent men (lib. III, fen 1, 5).

### The formation of the faetus

Egyptian physicians seem to have been ignorant of the ovaries, the nature of which was unknown also to much later physicians, like Hippocrates<sup>(36)</sup>. It is even difficult to surmise the exact share ascribed to the mother in conception, in contrast to the father's that was fully understood. The legend of Seth and Horus, the story of the creation of the world by Atum unaided, and the Tale of the Two Brothers contain sufficient references to the essential role of man's seed. That the seed was known to take a physical part in the formation of the body is also shown by such a qualification as: "Pharaoh's daughter *from his own body*", given to Princess Idout<sup>(37)</sup>.

On the origin of semen and the development of the faetus, Sauneron<sup>(38)</sup> gathered from the Persian era some Egyptian notions, many of which were shared by contemporary Greeks. These indicate the belief that sperm comes from bones:

"He separated (?) their shapes in order to bring forth males who fecundate women, creating their secretions and pouring their seeds into the bones (Temple of Hibis, Kharga)".

"You fecundate woman with the seed that comes from the bone (Edfu)".

"The seed from the bones of He who created Himself (Denderah)".

"Khnum who creates the egg .... and who creates the seed in bones (Philae)".



It has been speculated, indeed, that in these texts 'bone' refers to the erect phallus, but Sauneron presented arguments, supported by Daumas, Grapow, and others, against this view.

The connection between seed and bones seems even more intimate in some texts that connect the phallus with the spine, intimating that these two parts constitute the complete generative apparatus :

"I bring the united phallus and spine that have been found in Pkhety, etc." <sup>(39)</sup>

The notions embodied in these quotations were compared by Sauneron <sup>(38)</sup> with the Greek idea that semen flows from the spine (Plato), the spinal cord (Hippocrates), or the bone-marrow (Hippon of Samos, 5th century A.D.). Regarding their comparative chronology he concluded that the Greek and Egyptian texts were contemporary, although a new discovery might in the future set their origin earlier in Egypt. Their existence in such a remote place as Khargah, however, would indicate their establishment in Egypt long before that period. On the other hand, a common origin may have been an old African myth <sup>(39)</sup> according to which bones come from the father, and soft tissues from the mother.

In Egypt, this last notion is explicit in the story of the punishment of Horus for the murder of his mother Isis, as told in the P. Jumilhac and in Plutarchus (*de libidine et aegritudine*) <sup>(39)</sup>, that relate how Horus was condemned to have his soft parts, inherited from his mother, taken out of his body, and that only the paternal parts were left. The complete theory seems to have been that the marrow flew from the spine through the phallus as sperm to be concretized as bone in the mother's womb.

Echoes of that embryology spread far and wide. Galen assumed that the organs of the body had two separate sources : some from the father, others from the mother; the white, bloodless parts, bones, cartilage, tendons, vessels, nerves, ligaments, and membranes being assumed to come directly from semen, whereas the menstrual blood furnished the material for the sanguineous parts, muscles, liver, and other viscera <sup>(40, 41)</sup>.

In Ancient India there prevailed very similar notions : the semen was thought to be produced from the marrow, and the marrow from bones ; hair, bones, nails, teeth, veins, nerves, arteries, semen, and all the steady and hard substances being contributed by the paternal element ... while flesh, blood, fat, marrow, heart, umbilicus, liver, spleen, intestines, anus, and all soft matters owed their origin to the maternal element <sup>(42)</sup> (S.S : I, 14 & III, 3, 19).

It is difficult to decide whether these notions spread from a single centre to central Africa, Egypt, Greece, and India, or whether they were born independently from parallel ways of thinking; but connections existed between these countries as far back as history and legend go, and the weight of evidence is in favour of an Egyptian or Afro-Egyptian origin.

### Confinement

The papyri are silent on obstetrical procedures, but the Westcar tale offers a glimpse of how delivery might have been conducted. Three details of the tale will be discussed in view of their relevance to later custom.

1. "... *Heket* accelerated birth". How did she accelerate it? Did she use an ointment, a pessary, or an injection, as recommended in *Eb.* 797-808; did she only re-assure Reddjet; did she jolt her up and down as in Greek, mediaeval and to-day's primitive practice; or did she attract the baby with a precious stone or a grain of coriander as in the European middle ages <sup>(43)</sup> ?

2. "The gods cut his umbilical cord, then washed him and placed him on a frame of bricks". It is not said whether the cord was tied previous to section. Was ligature omitted in the tale because it was taken for granted, or did the midwives wait until the umbilical circulation in the cord had stopped, before cutting it ? Celsus advised section and ligature of the cord after expulsion of the placenta <sup>(44)</sup>, and even today, both procedures have their advocates <sup>(45)</sup>.



3. "Isis said to the baby: Do not be too powerful in the name of *user-ka.f* (Powerful is his ka). And Meskenet said: A king who will wield power over the whole country." This is an example of the compelling and creative force of words and of the concept that things exist only in function of their names. That the baby in this tale grew to become pharaoh Userka, the very words pronounced by the goddess, is in line both with the special powers attached to the words uttered at birth, that gave the new born its name and determined its fate, and with the way personal names were composed in Egypt<sup>(46, 47)</sup> and in the Bible<sup>(48)</sup>. The practice survived among Arabs who gave their children names of power: Fahd (leopard), Sagr (hawk), Seif (Sword), Feysal (sword), or wishful names, Fatimah (the weaner), Al-Montasser (the victorious), but gave their followers and slaves names of pleasant or precious possessions = Yaqut (ruby), Morgan (coral), Berlant (diamond).

Finally, the spread of Egyptian methods of diagnosing pregnancy and of predicting sex is too well known to merit mentioning, and so is the inheritance of many curious medications<sup>(49)</sup>.

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## THE STAIRCASE OF THE GOD IN ABYDOS







BY

ABD EL HAMID AHMED ZAYED

### The Staircase of the God in Abydos



In many ancient Egyptian texts, dating from the Old to the New Kingdom, and particularly from the Middle Kingdom, are references to a staircase, frequently called the "Staircase of the Great God" and mentioned in connection with Abydos.

### The Mention of the Staircase in the Old Kingdom

The earliest written religious texts which have survived from Ancient Egypt are the famous "Pyramid Texts". It is an accepted fact that some of the material in the "Pyramid Texts" is far older than the earliest surviving copy, that of Wenis (late V dynasty) and parts of them may go as far back as the days pre-history. In the "Pyramid Texts" we find some references to a divine ladder, by means of which the dead king may ascend to heaven. Reference to this ladder is to be found in the following chapters 478, 530, 568, 620, 688. In these texts just mentioned, the ladder is called mkt  (1) or m3kt  (   ), and is determined by  or  (2).

The most significant of these "ladder" texts is that in Ch. 478 (line 971 d,e) which reads.

(1) Wb. II, 158.

(2) Wb. II, 33, G ; Raymond O. Faulkner, "A Concise Dictionary of Middle Egyptian," Oxford (1962), p. 103  m3kt ladder, varr. .

   .







### The Staircase on the Archaic Tablets

Although the earliest mention of the staircase of the God, so far known dates from the Old Kingdom yet we have significant representations which date back to the beginning of the Archaic Period.

The small "tablets" of ebony or ivory, found in the archaic tombs at Abydos and elsewhere, frequently show engraved scenes depicting a God or King enthroned on the top of a staircase, and sometimes a staircase only.

A tablet of King Djer<sup>(1)</sup> now in the Berlin Museum,<sup>(2)</sup> is divided into four registers. In the second of these is shown a crenellated rectangle, the left-hand end of which is occupied by a large flight of steps, inscribed  $\text{𓂏}^* \text{𓂏}$  (see fig. 1).

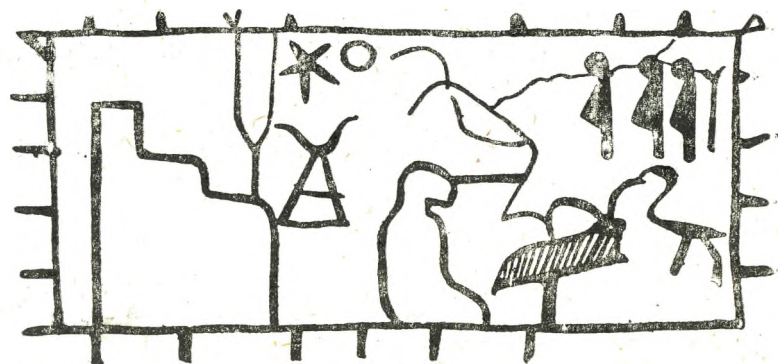


Fig. 1

Before the steps, and with its back turned to them, is a human figure, seated on the ground, and wrapped in a long cloak. At the right-hand end of the rectangle are some hieroglyphic signs, an ibis, a ram (or bull ?) couchant upon a standard.

(1) This is the same king whose tomb at Abydos was later mistaken for that of Osiris.

(2) Newberry, "P.S.B.A." XXXIV (1912), Pl. XXXIII, 15.

A tablet from Abydos, bearing the names of King Den  $\text{𓂏}$ , and his Chancellor, Hemaka (see fig. 2)



(Fig. 2)

shows the King performing the ancient ritual dance before a shrine, which is situated at the top of a flight of stairs. In the shrine is enthroned a mummiform figure of a King or God, wearing the crown of Upper Egypt, and holding the  $\text{nh} \text{nh}$  flail. J. Vandier<sup>(1)</sup> considers this scene to be a representation of the Heb-sed of King  $\text{𓂏}$ , and that the two figures both represent the King. On the other hand, Budge considered that the enthroned figure represents Osiris, before whom the King is dancing. In his Introduction to his English translation of the "Book of the Dead", he says<sup>(2)</sup> in describing the scene on this tablet:

"That the God in the shrine is Osiris is beyond doubt, for he occupies the position on top of the staircase, which in later days gained for Osiris the title of 'the God on the top of the staircase'." Here he quotes a passage from Chapter XXII of the "Book of the Dead" (see below, p. 14).

(1) J. Vandier, *Manuel d'Archéologie Egyptienne*, Vol. 1, p. 853.

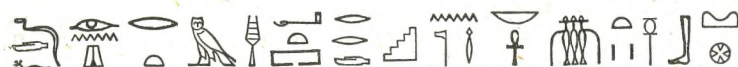
(2) Budge, "The Book of the Dead" (Translation), Vol. 1, p. XXXV.





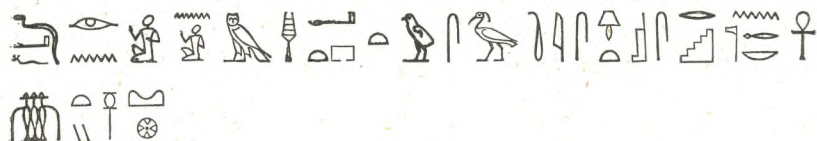


On the stela of wa'b-priest, Nekhti, found to the north of Kom el Sultan, and now in the Cairo Museum (No. 20099) <sup>(1)</sup> we read :



"He says : I have made a tomb at the staircase of the Great-God, Lord of Life. President of Abydos."

On another stela from Kom el Sultan (Cairo Museum, No. 20153) <sup>(2)</sup> we have :



"He says: I have made for myself this tomb, glorious and excellent seat, at the staircase of the Great-God, Lord of Life, President of Abydos."

The XII dynasty stela of the Vizier Montu-hotep No. 20539 <sup>(3)</sup> records.



"A royal decree ordering that there should be built for him a tomb at the staircase of the Great-God Lord of Abydos, recording all thy offices and all the pleasing things which thou didst."

(1) C.G.C., Grab und Denksteine des Mittleren Reichs im Museum von Kairo, Von H.O. Lange and Schäfer, Berlin (1908), vol. I, p. 119.

(2) *Ibid.* p. 180.

(3) *Ibid.* Vol. II, p. 154.

Sisatet, an important official who visited Abydos during the reign of Amenemhat III, left a commemorative tablet there, on which he inscribed : <sup>(1)</sup>

"Stela which the master of the Double Cabinet of the Office of the Chief Treasurer, Sisatet, made, in order that his name might endure at the stairway of the Great-God."

An official named Khu-Sobek, built for himself a cenotaph at Abydos, in which he inscribed the following:

"I made for myself this cenotaph, beautiful, with its place established at the Stairway of the Great-God, Lord of Life, who Presides over Abydos, in the district 'Lord-of-Offerings', and the district 'Mistress-of-Life', that I might smell for myself the incense and might be provided with the God's vapour." <sup>(2)</sup>

The stela of the Physician of Serket, Soker-em-hat, was found in the northern Middle Kingdom Necropolis at Abydos <sup>(3)</sup>. Here the text seems to suggest that the staircase was an existing reality; a place which offerings could be brought :



"Bring to him immediately the offerings of the Necropolis, together with the followers of Osiris upon the staircase."

Another stela from Abydos <sup>(4)</sup> belonged to an Overseer of the Storehouse of Grain, who

(1) Found at Abydos, now in Geneva. Breasted, "Ancient Records of Egypt," vol. I, 300 ff.

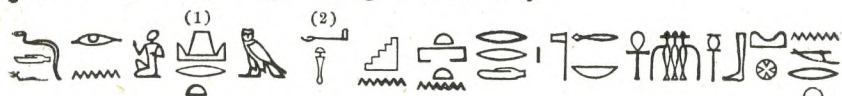
(2) Stela in Manchester Mus., England, Pritchard, "Ancient Near Eastern Texts," p. 230.

(3) Now in the Cairo Mus., No. 20088.


(4) Now in the Brit. Mus. London, (No. 515), Budge, "The Mummy" (edition 1925), p. 441.

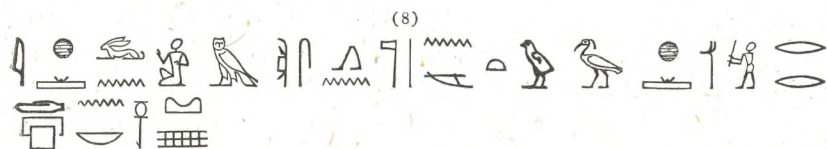


lived during the reign of Senusert III. It is dated to year 7 to the king's reign, and says :



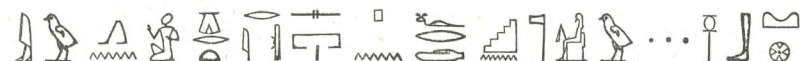
"He says: I have made a tomb at the staircase of the Great-God, Lord of Life, Presiding over Abydos, in love."

The stela of Sehotep-ib-Ra'  who lived during the reigns of Senusert III and Amenemhat III, was found in the northern enclosure of Kom el Sultan, at Abydos and is now in the Cairo Museum. (3) On it the deceased prays (lines 7-8) :



"O may I be in the following of the God, for the sake of (acquiring) glory and strength at the stairway of the Master of Abydos."

A Thinite official named Entef-iker, left a stela at Abydos, dated to the year 33 of Senusert I, on which he says : (4)




"I came to this his tomb at the staircase of the August God. (Lord) of Abydos"

On yet another stela in the Cairo Museum, we read : (5)



(1) for  ?

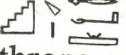
(2) for  ?


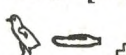
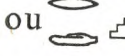
(3) Moharram Kamal, A.S.A.E. T. XXXVIII, p. 282.

(4) Dr. P.A.A. Boeser, Beschreibung der Aegyptischen Sammlung des Niederländischen Reichsmuseums der Altertümer in Leiden. Erste Abteilung, Stelen, Pl. II.

(5) C.G.C. Länge und Schäfer, vol. II, No. 20497.

"I made for myself a tomb, a glorious and excellent seat (beside) the staircase of the Great-God, Lord of Life, Presiding over Abydos."

Speaking of the Great Staircase in his "Le Reposeur du dieu Min", Gauthier (1) said : "au Chapitre 168  était lu par lui khet aa et rendu par the great throne on which Osiris sat.

Il ne s'agissait donc plus de l'escalier ou de l'es- trade supportant le trône d'Osiris, roi des dieux et du monde funéraire, mais bien de ce trône lui-même. On peut, du reste, se demander si nous avons bien là le mot htyu et non plutôt l'autre mot bien connu pour désigner un escalier  rwd,  ou 

### The Staircase in the New Kingdom

The advent of the New Kingdom finds the Staircase of the Great God firmly fixed in religious tradition. Not only is it frequently mentioned on the stelae, and in the religious works of this period, but it is also represented in religious art. As an illustration to the "Book of Gates", engraved upon the alabaster sarcophagus of Sety I, Osiris is shown as Judge of the Dead, seated upon his throne, set on the top of a staircase. (see pl. I) (2) An identical scene is painted on the western wall of the entrance passage to the Osireion at Abydos.

On the eastern wall of the Corridor of Kings, in the temple of Sety I, at Abydos, is a curious reference to the Staircase. It occurs in a list of deities and their places of worship, and is exactly opposite to the famous list of kings. Among the Gods who were to receive

(1) Henri Gauthier in Kemi II, "Le Reposeur du dieu Min" p. 68.

(2) Budge, "The Egyptian Heaven and Hell" vol. II, p. 159.











not mention a staircase, but in line 11 the deceased says : <sup>(1)</sup>



“I set up a ladder to heaven among the Gods, and I am one among them.”

In the late “Book of Traversing Eternity” <sup>(2)</sup> the deceased is assured that he will be permitted to :



“Thou ascendest the staircase of Hwt-Heb-sed.”

#### The Probable Existence of the Staircase

With so many reference to the Staircase of the Great God in Abydos, we are justified in assuming that such a staircase actually existed there. So far as excavations have revealed, we know of the following staircases in Abydos :

1. Stairways descending to the burial-chambers of some of the archaic mastabas.

2. A very imposing staircase, built of mud-brick, plastered and whitewashed. This led up to the Temenos of the Cenotaph of Senusert III <sup>(3)</sup>. It is in a perfect state of preservation, but has been re-buried.

3. Two small flights of steps leading down from this “island” in the Osireion to the water-channel.

4. A staircase leading from the quay of the canal to the first Pylon of the Temple of Sety I.

(1) Ibid. (Text), vol. II, p. 279.

(2) Budge, *ibid.*, vol. III, p. 156 from a papyrus in Vienne.

(3) Ayrton, Currely and Weigall, “Abydos”, vol. III, p. 12, pl. XLII, 2,3.

But none of these staircases seem to fit the requirements of the Staircase of the Great God. Those of the archaic mastabas are a normal feature of such tombs ; those in the Osireion are insignificant, those of the Cenotaph of Senusert III and the temple of Sety I are too late in date. May we assume that somewhere in the Necropolis there lies a monumental staircase, as yet undiscovered? And if so, where? The fact that most of the Middle Kingdom stelae mentioning the staircase come from the northern end of the site, would suggest that it should be somewhere in that locality. The Middle Kingdom, and the Archaic cemeteries there have all been investigated, but there remains a site to the north of Kom el Sultan, and north west of the Deir El Sitt Daminia and the Coptic cemetery. But this area is a flat plain, and an ascending staircase descended in rock-cut steps, as though leading down to the Underworld (the *Dst*).

There is yet another possibility. The staircase may be the name of some natural feature <sup>(1)</sup>. The staircase may simply be another name for the curious gap in the hills, also called “Pega, the Gap”, by way of which it was believed that the dead travelled to the Kingdom of Osiris, and through which they might return every year and re-visit-Abydos at the season of the Great Feast of Osiris. The slope of sand descending through this gap might well be envisaged as a staircase leading to the Kingdom of Osiris. Or the sand, never removed in modern times, may be hiding rock-cut or masonry steps. <sup>(2)</sup>

The question of the existence of the staircase, and its probable locality, has been discussed by several

(1) Compare with numerous English place-names, such as “Devil’s Dyke, Devil’s Elbow, Devil’s Bridge, Giant’s Causeway”, all of which are natural features or curiously shaped rocks.

(2) In another gap in the mountains, a little to the north of Pega (or Peker) is a great staircase, used, until very recent times, to connect the desert road to the Khargah Oasis with the Nile Valley. This was kept in repair by means of stone, and rubble, but now it is covered by the sand, and no longer in use.



eminent scholars. Maspero <sup>(1)</sup> published the following text from a stela from Abydos :



"It is here, the tomb which I have made in the Thinite Nome at Abydos, near the staircase of the Great God, master of the Gods, upon the district of the Lord of offerings at the western horizon, that may be a powerful Glorified Spirit in the following of the Great God."

Commenting on the formulae of these votive stelae, Maspero said that many wealthy persons desired to construct their tombs at Abydos. Later, pilgrims or other devotees of Osiris deposited in the vacant places between the tombs, votive offerings of stelae, statues and pyramidions, which, after a long interval, became crowded against the walls. After some years this compact mass of objects, isolated in the midst of the ruins of the temple, formed a kind of artificial mound, now known as Kom el Sultan, but which was in other times known as "The Staircase of the Great God".

But the part of Kom el Sultan to which Maspero refers dates to the Middle Kingdom, and is thus too late to be the original sacred staircase.

Amélineau, who made extensive, if not always scientific, excavations at Abydos, in the Archaic Cemeteries, believed, like the Egyptians of the Middle and New Kingdoms, that the tomb of King Djer, at Umm el Gaab, was the actual burial place of Osiris. In his opinion, the staircase of the Great God was also at Umm el Gaab, and he says <sup>(2)</sup> : "It remains well established that the objections formulated have not modified the identi-

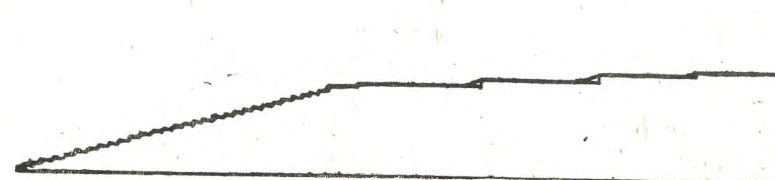
(1) Maspero, "Études Égyptiennes", tome I, fasc. II, p. 128.

(2) Amélineau, "Le Tombeau d'Osiris", p. 147.

fication which I have proposed, that this is really the tomb of Osiris which I have found, this which the texts name the house of Osiris, or the staircase of the Great God". The same author adds: "Maspero has written that the staircase of the Great God was at the Temple of Kom el Sultan, that is an error which my excavations are going to rectify."

Erman, in his book on the religion of Ancient Egypt <sup>(1)</sup> does not treat the question of the staircase very seriously, and says that mention of it signified nothing more than a wish to be near the God, the Master of Abydos, and to be near to his tomb.

We have just mentioned (p. 18) the staircase leading from the quay to the First Pylon of the Temple of Sety I at Abydos. But if we consider a section of that Temple (fig. 6), we shall see that the whole building is nothing but one gigantic staircase, leading up to the desert where lay the sacred tomb of Osiris. We know, of course, that in all the large temples of the New Kingdom, the height of the roof decreases as we approach the Sanctuary. This is usually achieved by lowering the height of the walls and columns. In this Temple of Sety I, it is the pavement of the building which is raised. Was this done to conform to the natural slope of the ground, or did Sety have in mind a large model of the ancient sacred staircase? (see fig. 6).



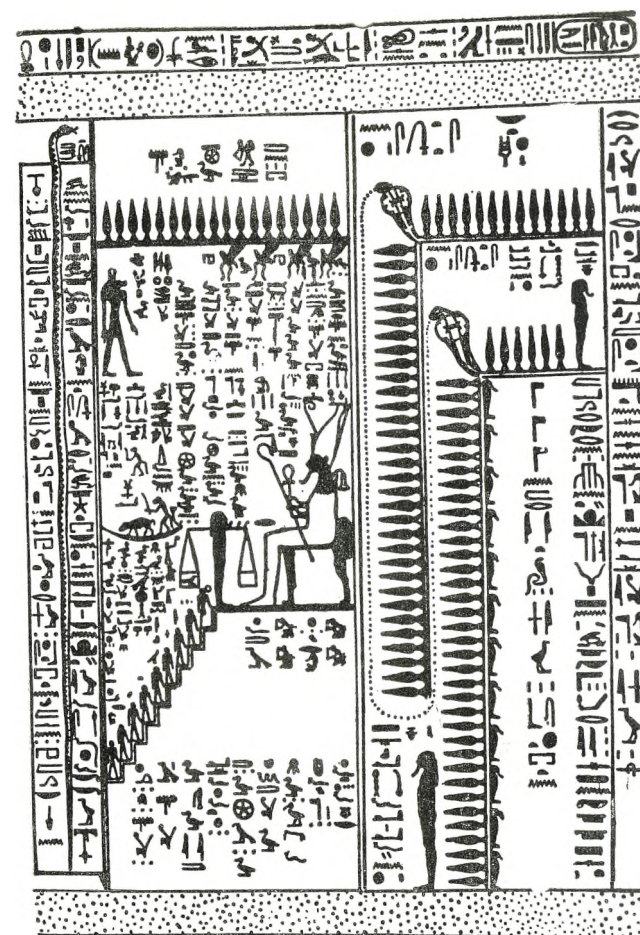
(Fig. 6)

(1) Erman, "Religion égyptienne", traduction par Charles Vidal (Paris), 1907, p. 192.

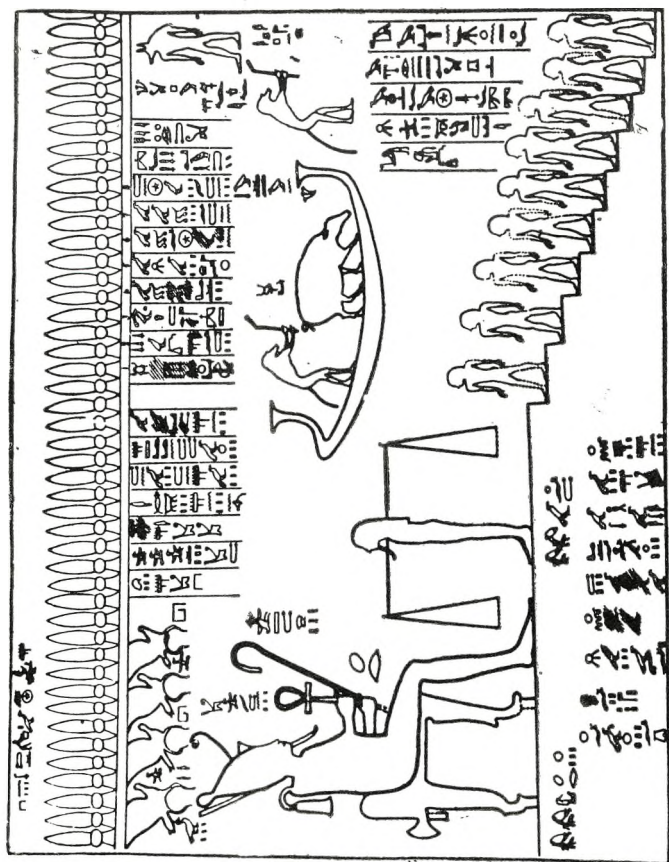


Other scholars think that the Staircase is a mythological feature of the Other World, and this also may be true. But we must take into account the belief of the Ancient Egyptians, that the Hereafter was only a reflection of Egypt, containing the same physical features and sacred cities. Therefore, if they considered that there was a staircase of the Great God in the Celestial Abydos, then there must certainly have been such a staircase here in the earthly Abydos.

Pl. I









## CHARLES LEBEAU UND DAS DEUTSCHE BYZANZBILD

VON J. IRMSCHER

Es ist allgemein bekannt und anerkannt, daß das Byzanzbild der historischen Wissenschaft wie der breiteren Öffentlichkeit Europas - und damit in weiterem Umfange auch deren Vorstellungen über die Geschichte und Kultur des Vorderen Orients - Jahrhunderte hindurch bestimmt wurden durch die Vorurteile, mit denen die moralisierende Geschichtsschreibung des Aufklärungszeitalters dem oströmischen Reich begegnet war. Da diese Vorurteile manchen aus recht andersartigen geistigen Voraussetzungen erwachsenen, hier im einzelnen nicht aufzuzeichnenden Tendenzen und Absichten entgegenkamen <sup>(1)</sup>, erwiesen sie sich als überaus langlebig und konnten erst durch das Wirken der Byzantinistik, wie sie sich in den letzten Dezennien des vergangenen Jahrhunderts in verschiedenen Ländern als moderne Wissenschaft konstituiert hatte <sup>(2)</sup>, Zug um Zug überwunden werden.

Es sind speziell zwei in ihrer Art bedeutsame Geschichtswerke, die jene Theorie von der Dekadenz des römischen Reiches, seinem tausendjährigen Verfall und dem dadurch bedingten moralischen Tiefstand von Byzanz in beeindruckender Plastizität gestalteten und über die Kreise der Fachwissenschaft hinaus Bedeutung erlangten <sup>3)</sup>: die "Histoire du Bas-Empire" (1757-1811) <sup>4</sup> des Franzosen Charles Lebeau und "The History of the decline and fall of the Roman Empire" (1776-1788) <sup>5</sup> des Engländers Edward Gibbon. Weil diese beiden Arbeiten über die Grenzen der Heimatländer ihrer Verfasser hinaus im Original oder durch bald einsetzende Übersetzungen rasch bekannt wurden und anderswo Werke zur gleichen Thematik nicht zustande kamen, die mit jenen nach ihren Qualitäten hätten gemessen werden können, durfte es nicht verwundern, daß Gibbon und Lebeau gelegentlich als die Urheber der vorhin gekennzeichneten Byzanzkonzeption erschienen <sup>6</sup>. In Wirklichkeit liegen die Dinge



jedoch gerade umgekehrt: Beide Autoren behandelten Gegenstände, die zu ihrer Zeit im Zentrum der gesellschaftlichen Diskussion standen, und dieses Faktum sicherte ihnen von vornherein eine Resonanz, welche sich dank äußerer Umstände, die ihren Werken vor anderen zugute kamen, in einem solchen Maße verstärkte, daß jene anderen Arbeiten daneben in den Hintergrund traten, ja fast in Vergessenheit gerieten. Die wissenschaftliche Priorität gebührt jedoch den Vorgängern und neben ihr auch das Meritum, manche der Thesen Lebeaus und Gibbons "präziser und markanter"<sup>7</sup> formuliert zu haben, als das jene "Klassiker" der Verfallskonzeption selbst vermochten.

Es war daher eine lohnende Aufgabe, die Wirkung Gibbons, speziell im Hinblick auf Deutschland gesehen, darzustellen, ihre Ursachen aufzudecken und damit zugleich ihre Grenzen abzustecken; die Resultate, welche die Untersuchung<sup>8</sup> zeitigte, gehörten gleichermaßen der Wissenschafts- wie der Geistesgeschichte zu. Im Nachstehenden soll nun versucht werden, das, was in bezug auf Gibbon bereits geleistet wurde, für Lebeau nachzuholen - wobei schon am Ausgangspunkt festgestellt sei, daß der Einfluß, den das Opus Lebeaus auf Frankreichs östliches Nachbarland zu üben vermochte, sehr viel geringer war als der Widerhall, den der englische Historiker fand.

Charles Lebeau, ein Latinist von einigen Qualitäten<sup>9</sup>, im Griechischen dagegen so wenig bewandert, daß er auf die lateinischen Übersetzungen griechischer Quellentexte angewiesen war<sup>10</sup>, wurde am 15. Oktober 1701 in Paris geboren<sup>11</sup>. Seit 1752 war er Professor am Collège de France, seit 1784 Mitglied der Académie des inscriptions et belles-lettres und seit 1755 deren Secrétaire perpétuel. Er hatte also bereits den Höhepunkt seiner wissenschaftlichen Laufbahn erreicht, als er 1756 das Werk begann, das seinen Namen bis heute mit der byzantinistischen Historiographie verbindet. Nicht mehr erlebt hat er dessen Abschluß, vielmehr starb er am 13. März 1778 - nach dem Erscheinen des 20. Bandes (1776). Die Fortführung erfolgte zunächst für den Band 21 (1781) von ungenannter Hand, ab Band 22 (1781) durch den Historiker und Bibliothekar H.P. Ameilhon<sup>12</sup>.

Auf seine Aufgabe war Lebeau nur bedingt vorbereitet gewesen. Er hatte verschiedene Probleme der römischen Geschichte bearbeitet; die Eigenständigkeit und Eigenart der byzantinischen zu erkennen, fehlten ihm - und seiner Zeit - nicht nur die Sprach-, sondern auch die Sachkenntnisse. Dementsprechend ist die Sicht, aus der heraus er die byzantinische Entwicklung zeichnet, die des Historikers des römischen Imperiums, und es ist daher keinesfalls gerechtfertigt, wenn der deutsche Übersetzer "Bas-Empire" mit "morgenländisches Kaisertum" wiedergibt<sup>13</sup>.

Sein Vorhaben kennzeichnet Lebeau in der Einleitung dahingehend, er wolle die Geschichte Konstantins und seiner Nachfolger darstellen bis zu dem Zeitpunkte, da "ihre Macht, von außen her erschüttert durch die Angriffe der Barbaren und von innen her geschwächt durch die Unfähigkeit der Regenten", den Osmanen erlag. Daß dieser Geschichtsabschnitt der römischen Geschichte zugehört, steht für den Autor außerhalb jeder Diskussion. Ganz im Sinne der Geschichtskonzeption der französischen Aufklärung<sup>14</sup>, sieht er in dem Reiche der Römer "le mieux établi qui fut jamais", woraus er den Schluß ableitete, daß es auch "le plus régulier dans ses degrés d'accroissement et de décadence" gewesen sei<sup>15</sup>. Die Perioden der römischen Geschichte lassen sich infolgedessen zu den menschlichen Lebensaltern in Vergleich setzen. Dabei wird das Mannesalter in dem Augusteischen Zeitalter erkannt, was befremdet angesichts des Umstandes, daß die Französische Revolution in der römischen Republik die verpflichtend-vorbildliche Staatsform erblickte<sup>16</sup>. Das Objekt des Geschichtsschreibers jedenfalls ist die "histoire de sa vieillesse" (nämlich des römischen Reiches). Dieses Stadium des Alters war anfänglich noch recht kräftig und wurde erst unter den Söhnen des Theodosius eigentlich spürbar: "de-là à la chute entière, il y a plus de mille ans". Ein so langsames Absterben erklärt der Geschichtsschreiber mit der Festigkeit des Römertums, das der seiner Werke gliche. Ungeachtet der Untüchtigkeit seiner Herrscher habe das Reich dem Ansturm getrotzt, einem alten Palaste ähnlich, der sich durch die Stabilität des Baus erhält, jedoch nicht mehr instand gesetzt wird, so daß fremde Hände ihn "nach und



nach niederreißen, um seine Bruchstücke anderwärts zu brauchen"<sup>18</sup>.

Man erkennt, daß Lebeau der historischen Leistung der Byzantiner, wiewohl auch er sie nur als Weiterleben und allmähliches Absterben des Römertums zu erfassen vermag, sehr viel stärker gerecht wird als sein Landsmann Voltaire<sup>19</sup> und auch als sein englischer Zeitgenosse Gibbon, für den die byzantinische Geschichte nach Herakleios nichts anderes bedeutete als "a uniform tale of weakness and misery"<sup>20</sup>.

Auch in der Durchführung seiner Aufgabe erweist sich Lebeau dem Briten überlegen, merkt man doch dem Werke des letzteren an, wie diesem die Pflicht des Historikers zunehmend lästiger wurde, so daß er die mittel- und spätbyzantinischen Geschehnisse derart unzulänglich behandelte, daß seine einschlägige Darstellung heute nur noch wissenschaftsgeschichtliche Bedeutung besitzt<sup>21</sup>. Lebeaus Schrift dagegen zeigt in allen Teilen etwa den gleichen Duktus, bis der Tod die Feder dem Schreibenden aus der Hand nahm, der durch sein Opus den Beweis erbrachte, daß trotz sich wandeln der Wertung der Phänomene die von den Gelehrten des Louvre begründete Tradition bewahrt wurde<sup>22</sup>. Gemäß dem Stile der Zeit fehlt auch nicht die Nutzenwendung der Lehren, welche die Geschichte vermittelt: "L'histoire de la décadence de l'Empire romain est la meilleure école des états, qui parvenus à un haut degré de puissance, n'ont plus à combattre que les vices qui peuvent altérer leur constitution. Il a fallu pour le détruire tous les maux dont une seule peut renverser des gouvernements moins solidement affermis"<sup>23</sup>.

In Lebeaus Heimatland wurde sein Werk in der Fachwelt ohne Sensation aufgenommen, gänzlich versagt blieb ihm jedoch die Massenwirkung<sup>24</sup>, da Gibbons "History", die zwei Dezennien nach dem ersten Band der "Histoire" zu erscheinen begann, dank ihrer scharfsinnigen Urteile<sup>25</sup> und ihrer Kritik auch in rebus ecclesiasticis dem Geschmack des Publikums stärker entgegenkam als der fleißige, kirchenfromme französische Gelehrte<sup>26</sup>. Immerhin wurde Lebeaus Opus im 19.

Jahrhundert noch eine Renaissance zuteil, als die Orientalisten de Saint-Martin (für das Armenische) und Brosset (für das Georgische) eine "Nouvelle édition" in 21 Bänden (1824-1836) veranstalteten, bei der vor allem die Lebeau unzugänglichen orientalischen Quellen eingearbeitet wurden<sup>27</sup>; in dieser Umgestaltung hat Lebeau der Wissenschaft bis in unsere Tage hinein seine Dienste geleistet<sup>28</sup>.

Was in bezug auf Frankreich zu sagen war, gilt in noch stärkerem Maße für Deutschland. Dem Original folgte bald die deutsche Übersetzung: 1765 bei dem Leipziger Verleger Caspar Fritsch. Die Titelgestaltung zeigte, wie bereits erwähnt, eine merkwürdige Verkenntung der programmatischen Absicht Lebeaus: Aus der "Histoire du Bas-Empire", dargestellt unter dem Gesichtswinkel des absterbenden und sich auflösenden römischen Reichs, war eine "Geschichte des morgenländischen Kaisertums" geworden, was in der Konsequenz die Eigenständigkeit und Eigengesetzlichkeit des behandelten Gegenstandes einbegriff, eine Konzeption also, die der Lebeauschen konträr gegenüberstand. Dass den Urhebern der deutschen Ausgabe eine solche Absicht tatsächlich fernlag, beweist der Zusatz im Titel, dass sie das neu erschlossene Geschichtswerk "als eine Fortsetzung der Werke der Herren Rollin und Crevier" angesehen wissen wollten. Charles Rollin hatte ohne viel Kritik die römische Geschichte "dépuis la fondation de Rome jusqu'à la bataille d'Actium" behandelt<sup>29</sup>, Jean Baptiste Louis Crevier sein Werk in Tillemontscher Manier<sup>30</sup> für die Zeit "dépuis Auguste jusqu'à Constantin" fortgesetzt<sup>31</sup>; beider Schriften waren neben anderen auch in deutscher Sprache herausgekommen<sup>32</sup>. Daß er Rollins und Creviers Namen mit dem Lebeaus verband, begründet der Übersetzer in seiner Einleitung - übrigens lebhaft bedauernd, daß Lebeau selbst auf ein solches Vorwort verzichtete - mit der inneren Verwandtschaft der drei Geschichtswerke sowie mit dem Umstande, daß diese ein Kontinuum darstellen. Inhaltlich weiß er an Lebeau zu preisen, daß dieser - er war in seinem französischen Original 1764 bis zum 7. Bande, dessen Darstellung die Mitte des 5. Jahrhunderts erreicht, vorge



drungen! - mit der Erhebung der christlichen Religion "aus den Trümmern der blutigsten Verfolgungen." eine Szene zu gestalten hatte, "die weit wichtiger ist als alles, was dem Heidentum Ehre macht". Mit dieser Aussage wird der fundamentale Unterschied deutlich, der Lebeau von Gibbon trennt und trotz geringerer gelehrter Fundierung - dem Letztgenannten zu vielfach stärkerer Wirkung verhalf: Gibbon hatte nach seiner Ansage "den Triumph des Barbarentums und der Religion" <sup>33)</sup> schildern wollen, und weil er mit dieser kritischen Sicht die philosophischen Ideen seiner Zeit zu untermauern vermochte <sup>34)</sup>, fanden seine Thesen auch in bezug auf jene Geschichtsepochen Glauben, für die sie eine solche Wertschätzung durchaus nicht verdienten <sup>35)</sup>.

Lebeaus Übersetzer, Johann Adam Hiller (1728-1804), hat übrigens einen festen Platz in der deutschen Musikgeschichte als Schöpfer des deutschen Singspiels sowie als erster Dirigent der Gewandhauskonzerte und Thomaskantor in Leipzig <sup>36)</sup>. 1754-1760 war er Hofmeister des Grafen Heinrich Adolf Brühl, eines Neffen des berühmtesten sächsischen Ministers <sup>37)</sup>; diesem seinem ehemaligen Zögling, damals Amtshauptmann des thüringischen Kreises, widmete er seine Übersetzung. Sie liest sich flüssig und einigermaßen gewandt, jedenfalls besser, als was sonst von ihrem Verfasser nur zum Broterwerb angefertigt wurde <sup>38)</sup>. Zehn Jahre hindurch, von 1765 bis 1775, widmete sich Hiller neben seinen kompositorischen Arbeiten diesem Geschäft und brachte zwölf Bände zum Abschluß <sup>39)</sup>; dann überließ er die Fortsetzung dem Nürnberger Archidiakon G. W. Panzer <sup>40)</sup>. Viel gelesen hat man Lebeau trotzdem auch in Deutschland nicht. Von den Literaturzeitungen der Epoche brachten die Göttingischen Anzeigen von gelehrten Sachen ausführliche Inhaltsangaben <sup>41)</sup> ohne viel Wertung. Wo diese aber zu finden, ist sie nicht sonderlich empfehlend. Der Verfasser habe "eine unangenehme Geschichte zu beschreiben" gehabt: "die Abnahme eines ehemals blühenden Staates", "wenig Tugenden, wenige Talente und wenig Siege"; aber auch seine Darstellungsweise sei nicht ohne Mängel: priesterhörig und ketzerfeindlich, weitläufig und oft den Zusammenhang

verlierend <sup>42)</sup>. Das gleiche Periodikum zeigte auch die Hillersche Übertragung an - kurz, aber mit Lob für den Übersetzer <sup>43)</sup>. Dagegen ging mit letzterem die Allgemeine deutsche Bibliothek des Berliner Aufklärers Friedrich Nicolai sehr arg ins Gericht, indem sie ihm an ungezählten Beispielen seine mangelnde Sachkenntnis nachwies, gleichzeitig aber Lebeau mit einem zurückhaltenden Lob bedachte <sup>44)</sup>. Wie anders dagegen hatte Gibbon den Kampf der Geister zu entzünden vermocht! Denn sogar bei den deutschen Gelehrten hinterließ der Pariser Professor nur geringe Spuren. Der fleißige Bibliograph Johann Georg Meusel verzeichnet Ausgaben und Übersetzungen und stellt Lebeau wie seinen Fortsetzer mit Recht über die Vorgänger Crevier und Rollin. Er lobt die Auszüge zumal aus den byzantinischen Quellen und tadelt die oftmals diffuse Darstellungsform. Vor allem aber mißfällt ihm die einseitige Parteinahme zugunsten der römischen Kirche <sup>45)</sup>. Auf die gleiche Schwäche weist - zu Beginn des 19. Jahrhunderts - der protestantische Theologe Ludwig Wachler hin, der bei aller Anerkennung der Bemühungen Lebeaus seinem Fortsetzer Ameilhon den Vorzug geben möchte <sup>46)</sup>. Dann aber schweigt die allgemeinhistorische Literatur - sogar der Geschichtsschreiber der neueren Historiographie, Eduard Fueter <sup>47)</sup>, über Lebeaus Werk <sup>48)</sup>, das nur in der byzantinistischen Spezialliteratur als eine notwendige, heute jedoch überholte Entwicklungsetappe erwähnt wird.

Fassen wir zusammen, so bestätigt sich eine Feststellung, die wir bei der Erörterung des Nachlebens von Edward Gibbon trafen <sup>49)</sup>. Die deutsche Bourgeoisie, im Ideologischen wie im Politischen nach Emanzipation strebend, suchte in der französischen Aufklärungsliteratur nicht das - negative - Byzanzbild; denn das war von anderen, voran Johann Christoph Gatterer und August Ludwig Schlözer, bereits früher gezeichnet worden. Woran ihr vielmehr lag, war eine begründete Kritik des Christentums und seiner historischen Rolle. Sie fand solche Kritik bei Gibbon und verbreitete darum sein Werk und seine Gedanken,



die Byzanzkonzeption, zumal sie der bereits verbreiteten entsprach, einbeziehend. Bei Lebeau gab es anstelle solcher Religionskritik einen festen katholischen Standpunkt; sein Oeuvre konnte daher zur Befreiung der Geister nur wenig beitragen und fand dementsprechend lediglich einen enge gezogenen Leserkreis unter den Fachgenossen.

## ANMERKUNGEN

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3. Zur Einschätzung vgl. Georg Ostrogorsky, Geschichte des byzantinischen Staates, 2. Aufl. München 1952, 5.
4. Le Beau, Histoire du Bas-Empire, 27 Bände, Paris 1757-1811.
5. Von mir benutzt in der von J.B. Bury besorgten Ausgabe, 7 Bände, Neudruck London 1909-1914.
6. Dazu Hans-Georg Beck, Χαλκίκες, München 1958, 93.
7. Formulierung nach Beck a.a. O. 93.
8. Irmscher, Edward Gibbon und das deutsche Byzanzbild, Klio 43-45, 1965, 537 ff.
9. M. Villemain, Cours de littérature française, 2, 2. Aufl. Paris 1873, 73; hyperbolisch gepriesen von Pierre Larousse, Grand dictionnaire universel du XIXe siècle, 10, Paris o. J., 286.
10. A.A. Vasiliev, History of the Byzantine Empire, 1, englisch von S. Ragozin, Madison 1928, 23.
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14. Dazu Irmscher, Byzantinistische Beiträge a.a.O. 15.
15. Le Beau, Histoire a.a.O. 1, 1757, 1.
16. Vgl. Lamer, Wörterbuch der Antike, 6. Aufl. Stuttgart 1963, 168.
17. Le Beau a.a.O. 2.
18. Le Beau, Geschichte a.a.O. 1, 3.

19. Über Voltaires Byzanzkonzeption vgl. Louis Bréhier, Revue d'Auvergne 18, 1901, 14 f., über seine einschlägigen Schriften; namentlich den "Essai sur les mœurs", vgl. Ferdinand Brunetière, Histoire de la littérature française classique, 3, Paris 1912, 290 ff.
20. Zitiert nach Irmscher, Klio a.a.O. 538.
21. Ähnlich schon Ernst Gerland, Das Studium der byzantinischen Geschichte vom Humanismus bis zur Jetztzeit, Athen 1934, 38.
22. Vgl. auch den Lobpreis der Erudition Lebeaus bei Villemain a.a.O. 74.
23. Le Beau, Histoire a.a.O. 4.
24. Das ergibt sich indirekt z. B. auch daraus, daß das Nouveau dictionnaire historique, 5, Caen 1783, 188 den 1778 gestorbenen Lebeau nicht erwähnt. Selbst Villemain a.a.O. 74 stellt fest: "Le Beau fut peu lu".
25. Die Behauptung von Larousse a.a.O., Lebeaus Werk sei ohne jede Kritik, scheint mir jedoch über das Ziel hinauszuschiessen.
26. Richtig hervorgehoben schon von Villemain a.a.O. 75.
27. Mir ist lediglich ein Teil zugänglich: Lebeau, Histoire du Bas-Empire, 2, 2. Aufl. von de Saint-Martin, Paris 1824.
28. Gerland a.a.O. 37 f.; zu hart urteilt Karl Krumbacher. Geschichte der byzantinischen Literatur, 2. Aufl. München, 1897, 1068.
29. Histoire romaine; von mir benutzt in der Ausgabe: Cl. Rollin, Oeuvres complètes, Nouvelle édition, 8-15, Paris 1818 (Bd. 8, V ff. ein "Éloge de Rollin" von de Boze).
30. So die Allgemeine deutsche Bibliothek, II 2, Berlin 1766, 275 (gleichzeitig mit geringfügigen Ausstellungen).
31. Histoire des empereurs romains; von mir benutzt in der 12bändigen Ausgabe Amsterdam 1750-1756 und in der 6 bändigen Ausgabe Paris 1818/19.
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37. Über diesen vgl. Hellmuth Rößler in: Neue deutsche Biographie, 2, Berlin 1955, 660 ff.
38. Vgl. auch Peiser a.a.O. 13. f.
39. Mir waren nur die beiden ersten Bände, Leipzig 1765, zugänglich.
40. Meuselius a. a. O. 129. — Biobibliographisches bei demselben (Meusel), Das gelehrte Teutschland a.a.O. 21 ff.
41. Z. B. Göttingische Anzeigen von gelehrten Sachen, 1765, 81 ff.; 1767, 505 ff.; 1769, 145 ff.; Zugabe zu den Göttingischen Anzeigen von gelehrten Sachen, 1777, 100 ff.
42. A.a.O. Jahrgang 1765, 61 f.; ähnlich Jahrgang 1769, 145.
43. A.a.O. 1766, 552 und 1024.
44. Z.B. Allgemeine deutsche Bibliothek, 7, 1768, 279 ff.; 14, 1771, 600 f. i. 29, 1776, 231; 34, 1778, 214 f.; Anhang zu dem fünf und zwanzigsten bis sechs und dreißigsten Bande der allgemeinen deutschen Bibliothek, 1779, 1408; Anhang zu dem sieben und dreißigsten bis zwei und funfzigsten Bande... 1785, 12 8f.
45. Meuselius a.a.O. V 1, Leipzig 1790, 174 f.
46. Ludwig Wachler, Geschichte der historischen Forschung und Kunst, II, 1, Göttingen 1816, 510, besonders Anmerkung 70.
47. Eduard Fueter, Geschichte der neueren Historiographie, 2. Aufl. München 1925, Index S. 617.
48. Aber auch Diltheys bedeutender Aufsatz "Das achtzehnte Jahrhundert und die geschichtliche Welt" (Wilhelm Dilthey, Gesammelte Schriften, 3, Leipzig 1927, 207 ff.) glaubt ihn unerwähnt lassen zu sollen.
49. Irmischer, Klio a.a.O. 537 ff.

### RÉSUMÉ

#### Charles Lebeau and the Image of Byzantium in Germany

The negative image of Byzantium which has its after-effects even to-day found its classical expression in "The History of the Decline and Fall of the Roman Empire" (1776 - 1788) by the Englishman Edward Gibbon and the "Histoire du Bas-Empire" (1757-1811) by the Frenchman Charles Lebeau. The direct influence of each author was, however, rather different, as can be shown by the echo they found in Germany. In Gibbon, supporter of the Enlightenment, the German bourgeoisie, striving after ideological and political emancipation, loaned for and found a thorough going criticism of Christianity and its role in history. At the same time, they accepted by implication his view of Byzantium. In Lebeau, engaged Catholic, no similar criticism of religion was to be found. Although his work was translated into German, its influence remained limited to restricted scholarly circles.

## THE NUMERALS

BY  
SOLANO PENA GUZMÁN

This group of idioms belonging to the Hamita's family shows, as far as the numeral is concerned, not only a notable morphological similitude in its lexicon as we will see later, but some grammatical concordances connected with them, which we now describe :

### The singularity of the quantities :

Contrary to the grammatical style of the Indo-European languages, which pluralize the substantives belonging to the phrase affected by numerals, for example: two books (books in plural), duo meree, three gods; zwei manner, etc; in most Hamita's languages such pluralization does not exist, and the substantives remain in singular.

The Egyptian language, the Sumerian and the Basque apply this rule : Like, for example, in Basque :

- 4 horses = Lau zaldi
- 2 dogs = bi zakur
- 3 houses = iru etxe

The substantives just mentioned are all in singular. The plural in Basque is indicated with the suffix: -ak. Therefore it should have been respectively : saldiak, zakurrak and etxeak. The Egyptian uses as plural the suffix "w" and the Sumerian has four different forms to indicate the plural, by mean of the archaic duplication, by the determinative sign "ga" and by the suffixes "ene" and "me". But none of these plural are used together with numerals.

The Russian language, although an Indo-European language, suffered the Hamita's linguistic influence



and has partially adopted this particular grammatical form; and so the substantives, when they are in the nominative or acusative cases, affected by the numeral up to the number, 5, goes always in genitive singular:

3 tables = tri stolá	Plural = stoli
4 words = chetive sloba	" = slabá

This rule is also valid for high numerals whose last figures stands below 5, as for instance 54 στοπá, 331 κυύρα, (books), etc. The subjects are in both examples in genitive singular. This Characteristic is present also in the Hungarian and in the Finland languages, which are two agglutinating languages like all belonging to the linguistic Hamita's family, and do not belong to the Indo-European group.

#### The vigesimal system :

The Basque numeration is essentially vigesimal, that is to say, on the basis of the number twenty (20) which in this language is denominated "ogoi". The nomination of the following tenths are composed of sums or multiples of this basis. Example :

30 = ogoia-t-amar	(20 and 10)
40 = ber-ogoi	( 2 × 20)
50 = berogoi-ta-amar	(40 + 10)
60 = iruetan ogoi	( 3 × 20)
70 = iruetan ogoi-ta-amar	(60 + 10)
80 = lauetan ogoi	( 4 × 20)
90 = lauetan ogoi-ta-amar	(80 + 10)

The French language adopted partially this model through the French Basque influence : soixante-dix (70); quatre-vingt (80) and quatre-vingt dix (90). Apparently in the archaic Basque this system was used with greater amplitude than to-day, since the numeral 100 (eun) it was used to say: bostogoi, it means,  $5 \times 20$  and the numeral 120 : seiogoi, that is to say,  $6 \times 20$

#### In the Sumerian :

This archaic language used from long time ago the seagesimal system, the vigesimal and the decimal, combined. Up to the sixth tenth, it was used the vigesimal system, it may be therefore the most ancient notion since the numbers are lower. Like :

40 = ni-min	(20 × 2)
50 = ni-min-u	(40 + 10)

The numeral twenty in Sumerian is : "niš", compound word of ni + aš, being the second term the unit (1). The first term "ni" is the basis representation (20) therefore the phrase would be; once the basis, that is to say : 20.

For the following tenth : 60, should be "ni-eš" that is to say 3 times the basis or  $3 \times 20$ . But this word's abbreviation in "niš" might confuse with that we use for the numeral 20 and therefore the Sumerians alternated the consonant of "n" to "g", thus resulting for 60 = "giš" basis of the sexagesimal system.

The alternation between the two quoted letters, in Sumerian, is very usual and in this special case, "giš" and "niš" beside the above mentioned meanings, have both the signification of wood.

The number 100 is "giš-nimin" ( $60 + 40$ ). The number 600 is "giš-u" ( $60 \times 10$ ) and the multiple 3.600 instead of redoubling the seagesimal basis is simplified with "šar". Likewise the numeral 100 is also simplified with "me". These simplifications are of convenience when one must write or name numerals of high order.

#### In Egyptian :

In this language, the decimal system is of preference practice, even when also used, as a simplifying to a system denominated "quaternary" which is similarly apply like the vigesimal.



“bakar” (unique) “öbataşun” (unity), “batz” (union), “bakuntza” (union), “Bakarti” (lonely), “bakarrik” (only), etc.

The expression “baty” for king of the Lower Egypt, is really an anomaly, since the root “WA” has already a derivative “waty” (unique) which has the inner meaning that originated the word sovereign, as the only powerful : the king. It might be borrowed from the Libya, where this title was first given. Considering the archaic supremacy of the Libyians in the Lower Egypt, in the Nile’s Delta, such hypothesis is feasible. It might be for this reason that in the Lower Egypt was adopted the bee as a royal symbol, since this insect in Egyptian is named “bat”. With this analogy the phonetical problem was resolved.

It is noteworthy how this term extended throughout the Hamita’s speaking people, thus we have in Basque : “bakaldun”, in Caucasian : “batu”, and in Greek : “basileos”. According to Mr. Lopez Mendizábal, the meaning of bakaldun is : “The only one who has the power”. In fact, the different compounds of this word are : bak, which signifies unity ; al, the power and aldun, the powerful. We could translate it, also, as “the only powerful”. Besides in the Basque language there is an expression which resembles the idea of kingship with that of unity. Therefore the word “bataiki”, which signifies “throne”, is formed with “bat” (one) and “alki” (chair, see). The sense of the first part of this word is similar to the Libyan “batu = king”.

In the Sumerian language, the numeral one is “aš” which may be read : ash. But it isn’t the only expression, for later on was added the variants “dil” and “diš”. For our investigation we shall hold the most archaic one, which evidently is related with the Hamita’s root “EK”, since, as a rule, the aspirated consonant becomes “k” in the related language, such as the Basque and the Caucasian. “Lonely” in Sumerian is “šir”.

In the Dravidic languages we found a great uniformity of the expression “eka” = (one), in the different dialects,

although in one of them appears the variant “as”, which remembers the Sumerian.

In the Berbere, as well as in the Hungarian, the “k” of the root becomes “g” : thus “igat” means (one) in the first language and “egy” in the second one. It is probable that the Latin expression “equus” (equal), is also related with this Hamita root, due to the great influence this language had in all the people, Hamitas or not, established on the Mediterranean basin.

In the North-African dialects of Hamitas races, such as the Hausa and the Peul, the word “eka” is the most common to designate the numeral one. In the Caucasian, Swane’s dialect, we get the mixed expression : “es-vi” = I, thus appearing both roots of the group, mixed up in a same word.

In the Basque, we have already mentioned, that the numeral “one” has two similar expressions, “bat” and “bak”, which come from the Hamita’s root “WA”. But in certain numerals, like in the numeral eleven (11) appears the sound “eka” as an autentic representative of the unity : “amaika” or “ameka” (amar = 10 plus eka = 1). Furthermore the idea of unique, has two suggestive forms in the Euscaro : “bakar” and “ekar”, and therein we can note the equivalence of “eka” with “bak”. Finally, if we analyze this last word, we note that it can be a mixed word, compound of “ba” (one) and of “ek” (one) ; both of them corresponding to the two main roots of the group. We have just seen that such duplication of two roots in the same mixed word is very common in this linguistic group.

Finally, we have in Russian the expression “eshō ras” (once more). The first part of the word seems to indicate the unity, so that, “esho” suggest a possible variant dialectal of the root “EK”.

The Russian Etimological dictionary of. G. UBITA-HEHKO does not assign to this word any Indo-Germanic root.



On the other hand, according to N. Lahovary (*Le diffussion des langues anciennes du Proche-Orient*, Berna : 1957) the Summerian term "pate-si" (king, Lord), together with the corresponding words in Dravidic : "poti" (King) ; in Etrusque "patu" (king) according to Kretschmer in ancient Egeo "bateion" and the Cretense "basi", all with the same meaning, are pointing, with overwhelming proof, to its common source, which is no other than the Hamitic root (WA = One) above mentioned.

### THE NUMERAL TWO

The great family of the Indo-European languages, have for this numeral the root, "DWO", from which derived in Greek: duo in Latin : duo; in Sanscrit: dua; in English: two; in German: zwei and in Russian: два.

But the Latin, have also one peculiar variant, for certain words derived from this numeral, namely "bis" (two times) and the distributive "bini" (from two to two). And from them, spurt the compounds words like : bicolor, biceps, bifrontis, bipedis, binominis, etc.

This particularity of the Latin is unique in the group to which it belongs. In the other languages always remain in the derived vocables the "d" from the original root, as for example in the Greek language: digamma, di-glwssos, di-dragmas, etc. The general opinion is that this anomaly can be explained because in the Latin the combination "dw" sometimes change in "b" as it happened with "bonus" and "bellus" both coming from a root "DWENOS" only applicable to the Latin and with an uncertain origin. There is also "bellum" from where derives the voice "belic" which presumably belongs to the Indo-European root "DAU" (to burn, to torment).

This explanation shows, nevertheless, some weakness. In the first place the scanty of his antecedents, and in the second place, for the fact that in Latin already exist many expressions derived from the numeral

two maintaining however the dental consonant "d" as for instance «duplus» (double) and «dubius» (doubt). It is difficult to understand why in some cases this consonant remains and the others not. This circumstance avail the possibility that in one of these contradictory variants, specially in that which departs from the original root, belongs really to another linguistic source probably Mediterranean. It is quite possible that the Romans who, in their conquests used to cover ample geografic zones, living during centuries with people from other nations, have adopted some of their latter expressions and included these words in their own lexicon.

During centuries, the Iberic Peninsula has been integrated in the Roman Empire, and therefore it is not strange that the Basque typically expression for the numeral 2 "BI" may have been the cause of this singular change of the dental for the labial consonant. Only one single word have this idiom to designate the Numeral 2 "BI" and it appears with notable constancy in all the derivated terms, as for example biko = pair; bili = per two; birden or bigarren = second; biren = half; bitu = duplicated; bina = from two to two; birna = two in each one, etc.

This morphological uniformity of the euskera, as regard the numeral "BI" appears again in those substantives that go by pairs, consequently called duals, specially as regard the human corp organs. For example :

be-larri	= ears
be-so	= arms (so = hand in archaic)
bi-rika	= lung
be-laun	= knee
be-gi	= eyes (igi = eyes in Sumerian)
be-atz	= thumbs
bi-zar	= beard (zar = hair)

This numeral two nomination is not exclusive of the Basques, and is very outspreaded in those idioms belonging to the Hamita's linguistic family.



For example in the Berbere is "bi"; in the Swahili is "bili" and in the Hausa is "bin". In the Dravatic the numeral 20, evidently relationated with the two, is according to the different dialects: "bis" and "bist". These antecedents logically induce to assume the probably existence of a typically Hamita's root, in spite of the fact that we find that in Egyptian 2 = snw and in Sumerian (2 = min) respectively, both circumstances apparently contradicting our hypothesis.

### The Egyptian dual:

In the Archaic hieroglyphics the numbers were designed with line or dots, thus given a real expression of the quantity idea, but it was not known the individual name of each number. Mr. Gardiner pointed out, that some names for certain numbers just appears in the Middle Empire. The numeral two was designed as "SNW". But this expression is certainly a loan from the Semitic idiom. Since in Accadic the number two is "sina", in the Hebreo is: "seni", in Arabian is: "sin" and in the Raš Shamra writings (Ugarit) is also "sin".

For that reason is legitimate to exclude this vocable from the autentique Egyptian-Hamita lexicon and to consider it as a simple loan taken from others Semitas idioms. But in this case we must investigate the possible existence of a real archaic Hamitic vocable, which if really exists may be found in the derived expressions from the numeral cardinal, where has maintained its original morfology, due to linguistic traditional inertia. Actually, the Egyptian language have the dual form in the plural, with wider concepts from those that we saw in the eusquera. The dual Egyptian instead of the Basque prefixs, have the suffixal form "wy", which in Mr. Gardiner's opinion is one of the most archaic Egyptian expression.

In Egyptian hieroglyphics, the nouns that morphologically always present themselves by pairs, as well as those, not having this particularity but that are matched by the phrase, both adopt the dual form. Therefore, for

example, the common plural would be then "aw" ideogram of the arm is a hieroglyphic representing an arm with phonetic value "a". But the human corp have only two arms, the dual imposes itself and the plural dual is "wy". The ears are consequently "msdr-wy" a pair of brothers is "sn-wy". The locality (nono) "Wab-wy" have the dual because it was founded two times, and one of the multiples of Egypt is "Ta-wy" that is to say the "double-land" referring to the Upper and Lower Egypt.

In the fractionaries expressions we can find too, another proof that in the ancient Egypt the numeral two was "wy". The fractionary quantities have always the hieroglyphic of the "r" with the special acception of "part". And when the numerator is a number in one unit under the denominator it can be simplified and name only the numerator. So that, the fraction  $\frac{2}{3}$  we can write "r-wy" (the two parts) - We are not now dealing with a dual suffix, but directly with the genuine expression of the cardinal number two. The Greeks adopted this mathematic simplification for the fractionary quantities and consequently the fraction  $\frac{2}{3}$  are denominated "ta-duo" "mere" that is to say the two parts. From this example spurt very clear the correspondence between "Wy" = duo = 2.

The Egyptian root of Hamitas extraction "wy", through their continental migrations, must have had a great influence in all the Mediterranean Basin during the most archaic periods. This fact explains the existence of the above mentioned vocables, among the nations with similar origin; which does not have the letters "w" and "v" as in the Basque. Consequently the phonetic value "wy" appears in those languages as "b". We have already mentioned the similar example in the Numeral one, because the Egyptian expression "wa" and "wat" appears in the Basque with capital "b", in the vocable "bat" (one).

In those languages which have these consonants, logically the form was maintained. It is interesting to



remark his influence over two Indo-European Mediterranean languages namely; the Greek and the Latin. For the numeral twenty they have the vocables "eikosi" and "viginti" which comes from a compound root "WI-K'MT". The first part correspond to the numeral two, and the second part to the numeral ten, which root DEKMT contracted first to dkmt and then loose the "D". In Greek, the "W" originated the gama "F", and becomes "ficati" or then, as always happens in this language, disappear the initial consonant and the expression became reduced to "ei-kosi" (two dozens). In Latin the "W" of the root gave as is common in this idiom the consonant "V" and the mixed vocable "vi-ginti" (twenty = two dozens).

Therefore, in Latin we cannot observe the remarkable uniformity that we see in the Basque for the expression of the numeral two. In Latin exists three different expressions for this number : a) one purely Indo-European, b) another from Hamita Mediterranean origin : "vi" and lastly c) another taken certainly from the Basque "bi". It is logically to suppose that this last expression is relatively the most modern one.

## IN THE HAMITA LANGUAGES

### THE NUMERAL TWO

The languages of this family that extended over the Mediterranean basin as well as the Indic Ocean cost, have for the number "two", two fundamental roots :

#### a) ER

Dravidic	ir
Basque	er-di
Nubian	or-re
Caucasic	ori, eru
Berber	rdt (half)
Russian	Sred (half)

#### b) WI

Egyptian	wy
Basque	bi
Berebere	bi
Swahili	bili
Hausan	bin
Dravidic	bis (20)
Greek	wi
Latin	vi, bi
Russian	v-toroi (2°)

There are also expressions in these idioms where both roots are bound in a same word, like in the Basque "ber" = bi-er and in the Caucasian (the Georgian) "or-vi" and the Swana : "er-vi" all with the numeral two signification.

In the Sumerian the number two is "min". It is very probably that in this archaic language something similar to the Egyptian happened, as far as the disappearance of an archaic expression corresponding to one of the traditional Hamita root, because this vocable, just mentioned, is relatively modern, and probably it has been taken as a land word from the Semita stock.

In accordance with Mr. Raymond Jestin (Abregé de grammaire sumerienne, Paris 1951) the dual doesn't exist in the Sumerian. But it is noteworthy that all those expressions susceptibles to be considered as duals, show a notable constance with the syllable „bi". As : ears : bi; Foot : bir; kidnye : bir; and eyes : ibi or igi. It is known that in the Sumerian doesn't exist the consonant "w" and "v" and therefore this syllable might eventually arise from a root "WI".

Furthermore, in the Hamitic languages, as among the Berebere, Caucasics and Aegean people, there exists a "collective particle" : "be" or "bo", used sometimes as suffix and another times as prefix, which can be connected with the same root. Lahiovary remarks that the name of the Lesbos island, may be decomposed in two words : "Les" and the collective suffix "bo". The actual name of the island is Lazes.



This root has probably influenced the formation of words in many European primitive people, as we see that, according to Kluge, the word : "both" = bo + the, in English and "beide" = ba + die, in German, all have the meaning of "the two", being the Gothic root "bei" undoubtedly with the signification of the Numeral two.

The Russian "oba", Lituan "abu", the Vedic "ubho", all with the meaning of "both", shows that the so-called Indo-European roots "AMBH" and "AMBHO", are indeed lend expressions of the ancient collective Hamitic "bi" ; without any relation with the root "DWO".

In the Greek language, the meaning of "amphi" (around) has a more genuine indo-european expression in the word : "peri", and furthermore, there are many compound vocables with "amphi", as in amphi-domos (double) ; amphi-tomos (of two edges), etc, which evidently shows an identification of this Greek word "amphi" with the numeral two.

#### The Distributive Suffixs :

In the Egyptian, we switch from the cardinal to the ordinal number, that is to say, from the notion of quantity to the relative position, adding to the first the suffix "nw". In the Basque the distributive suffix is "na", then it is said : from two to two : bi-na and from 3 to 3 : iruna.

The Indo-European idioms don't have this grammatical modality for the distributive numerals. They use instead some prepositions like in Greek, "kata" "ana" and "ayn".

All these antecedents give evidences that the Latin has not only taken from the Basque the Euscaro vocable : "bi", but likewise the Basques derived expressions of this numeral, specially those of bina, binario, etc. These are relatively recent loans and it is possible that they don't go further than the first century of our era. Mr. Corominas, in his Ethymological Dictionary of Spanish language, refers for instance, that the vocable "binominis" was

specially created in the XIII Century of our era by Gerardo de Cremona, to translate a Greek expression from the book of Euclides to Latin. Notwithstanding this assertion, Ovidio, centuries in advance, used this vocable referring the Ister river also denominated Danubio.





# RAPPORT SUR LES TRAVAUX A SAQQARAH

(26 Novembre 1969 — 25 Mars 1970)

Par M. JEAN - PHILIPPE LAUER

## I. Reconstitutions et *anastylose* aux monuments de Zoser.

Les travaux ont porté sur trois points principaux de la "Cour du *Heb-Sed*".

### 1. *A l'une des petites chapelles de l'Est.*

Cette reconstitution entreprise au cours de la campagne précédente est maintenant bien avancée. Le soubassement haut de 2m, 10 contenant la petite chambre disposée latéralement avec fausse-porte ouverte, niche à offrandes et plafond simulant des rondins, est complètement achevé. Quant à la façade proprement dite, qui au-dessus de ce soubassement doit comporter 21 assises jusqu'au départ des éléments à replacer de sa crête de couronnement caractéristique, elle s'élève présentement à la neuvième, soit à plus de 4 mètres de hauteur.

Plusieurs blocs d'angles, qui présentent une petite saillie plane d'encadrement sur la façade principale, ont été réincorporés : trois à l'angle N.O., et deux à l'angle S.O.

Enfin les murs latéraux, limitant l'accès en chicane à la chapelle, ont également été en partie reconstitués.

### 2. *Aux deux chapelles à escalier.*

Ces chapelles situées sur le côté Ouest de la cour font suite vers le Nord au pavillon à tores d'angles que nous avons recomposé précédemment.

En ce qui concerne la première des deux à partir de ce pavillon, les tambours que nous pouvons attribuer à ses colonnes sont en nombre tout à fait insuffisant pour permettre d'en



entreprendre l'*anastylose*. Aussi, avons-nous décidé de nous contenter d'amorcer, au-dessus du soubassement de cette chapelle, sa façade simplement sur 3 ou 4 assises et de faire porter l'effort principal sur la reconstitution de sa voisine. Nous possédons, en effet, là beaucoup plus d'éléments aussi bien des colonnes que de la corniche arquée avec ses départs de chaque côté.

Dès à présent, les deux pilastres d'antes de cette seconde chapelle avec les murs contigus atteignent respectivement les 8ème et 9ème assises au-dessus du soubassement. La première colonne après l'escalier, qui est la seule des trois, que comporte l'édifice, à se dresser à partir du niveau du sol, s'élève maintenant à la 15ème assise. Quant aux deux colonnes suivantes vers le Nord, qui ont nécessité à leur base la reconstitution de plusieurs tronçons à placer au-dessous des tambours retrouvés dont les niveaux ont pu être déterminés, seul le premier tronçon de chacune, comportant deux assises, pourra être mis en place d'ici peu par les soins de mon assistant, l'architecte Salah El-Naggar.

### 3. A l'estrade du Heb-Sed.

Les fondations et l'assise de base du petit escalier disparu, à reconstituer, ont pu être achevées : la marche de départ arrondie et bombée a été coulée en béton et pierre artificielle dans un moule pris sur la marche correspondante de l'autre escalier conservé. Quant aux deux marches supérieures, que nous préparons également en béton et pierre artificielle, elles seront posées dès leur achèvement sous le contrôle de M. Salah El-Naggar.

## II. Recherche de l'entrée de la descenderie utilisée par les violateurs du tombeau Sud de l'Horus Sekhemkhet.

Cette recherche avait été entreprise au cours de la précédente campagne à l'angle S.O. du massif de la première enceinte, puis dans la tranche centrale de cette dernière au Sud sur une vingtaine de mètres en direction de l'Est. Cette année, durant un peu plus de deux mois, nous avons élargi le déblaiement tout en l'étendant vers l'Est encore sur une

quinzaine de mètres. Puis l'alignement de la perpendiculaire au point de l'effondrement de la descenderie étant largement dépassé, il nous a paru inutile de poursuivre dans cette direction.

Ayant remarqué une poche de sable à quelques mètres au-delà nous avons, néanmoins, décidé de l'examiner. Nos sondages nous ont alors conduits, au-dessous de la couche de sable, à un puits de 1m, 50×2 m, 10 d'embouchure, creusé dans les débris compacts de l'exploitation de la maçonnerie de l'enceinte, où sont apparus des poteries brisées d'époque saïte ou un peu plus tardive, puis des vases canopes cassés en calcaire que nous avons pu reconstituer et dont les 4 bouchons à tête humaine sont bien conservés. Parmi les fragments de poterie, plusieurs présentent des inscriptions à l'encre en hiéroglyphes anormal ou en démotique.

Nous avons ainsi espéré un moment que ce puits pourrait se prolonger plus bas dans le roc, car il paraissait, à 6 mètres environ, s'enfoncer dans la couche de sable rouge et de gravillon, qui constitue la surface du terrain naturel, mais il n'en fut, hélas ! rien.

Enfin, les derniers jours ont été employés à élargir le déblaiement de l'angle S.O. de l'enceinte tant vers le Nord que vers l'Ouest, sans autre résultat appréciable que la mise au jour de quelques blocs de calcaire fin, in situ, de l'assise de base du parement bastionné, prouvant que celui-ci avait été au moins commencé de ce côté.

## III. A la pyramide de Pépi 1er.

Ces travaux subventionnés par la Commission des Fouilles françaises et exécutés, en collaboration avec le Service des Antiquités, sous ma direction et celle de M. Jean Leclant, Professeur d'égyptologie à la Sorbonne, avec l'assistance de M. Georges Goyon, Maître de recherche au C.N.R.S., de Mlle. Catherine Berger, égyptologue, de M. et Mme. Jacquemin, artistes-dessinateurs, et de l'inspecteur du Service des Antiquités M. Abdallah S. Mahmoud, ont porté sur deux points : d'une part, à l'intérieur de la pyramide, sous la conduite du



raïs Abdou Crèti, la continuation du dégagement et de la consolidation de la chambre sépulcrale ; et, d'autre part, à l'extérieur, sous la conduite du raïs Hussein Ibrahim, la poursuite du déblaiement des magasins du temple atteints au cours de la campagne précédente et paradoxalement préservés par leur utilisation dans l'antiquité comme fours à chaux.

Dans la chambre sépulcrale la paroi Sud, qu'il s'agissait de réédifier pour éviter tout glissement ou éboulement, est maintenant presque achevée, et les points dangereux sont dépassés. Il nous restera là encore, au cours de la prochaine campagne, à briser en fragments les énormes blocs de la voûte effondrés par les carriers du Moyen Age, pour pouvoir dégager le mur pignon oriental de la salle et rétablir la communication vers l'Est avec l'antichambre. Ces travaux nous ont permis d'extraire des éboulis de très nombreux fragments de textes, dont le chiffre total pour cette pyramide est tout près d'atteindre 1800, et de découvrir en place la cuve en granit rose, destinée à recevoir la caisse à canopes, avec son couvercle relevé qui est constitué par une dalle plate carrée de même matière.

A l'extérieur, l'ensemble des cinq magasins parallèles séparés par des murs en épis a pu être dégagé. Ce travail nous a rapporté encore plusieurs fragments de statues de prisonniers, semblables à celles trouvées antérieurement dont nous donnons ici des photographies (voir pl. I-VI). Nos derniers déblaiements ont livré principalement un élément de buste complétant une statue tronquée découverte l'année dernière, et une belle tête à perruque frisée malheureusement gravement endommagée (pl. VI) au nez légèrement épaté et aux fortes lèvres, ainsi que deux autres fragments de têtes à perruques également frisées. Puis, le déblaiement ayant été étendu vers l'Est, la base de la colonne centrale en granit située au centre de l'antichambre carrée donnant accès à la salle aux offrandes est apparue encore en place. Cette base circulaire comprend taillés dans le même bloc un élément du dallage et un tronçon de la colonne octogonale où quatre grands pans alternent chacun avec un plus petit. Un jambage de granit de la porte d'accès à cette antichambre,

portant gravé le bas de l'inscription habituelle, ainsi que les restes terriblement exploités de la chambre aux cinq niches à statue ont également été mis au jour.

Ces déblaiements, qui ont livré en outre divers fragments de bas-reliefs de style excellent, ainsi qu'un nouveau bloc gravé en creux au nom de la reine mère du roi Têti, nous ont apporté la preuve que le plan du temple de Pépi Ier était presque exactement le même que ceux des temples de Têti et de Pépi II.

Enfin, dans les couches de sable qui recouvraient les magasins, des sépultures remontant pour certaines au Nouvel Empire indiquent que le temple était déjà exploité comme carrière à cette époque.

Tels sont les importants résultats obtenus à cette pyramide de Pépi Ier, à laquelle il sera encore nécessaire de consacrer une partie de notre prochaine campagne, avant d'entreprendre le déblaiement de celle de Meren-rê, où le même travail est à effectuer.

JEAN-PHILIPPE LAUER





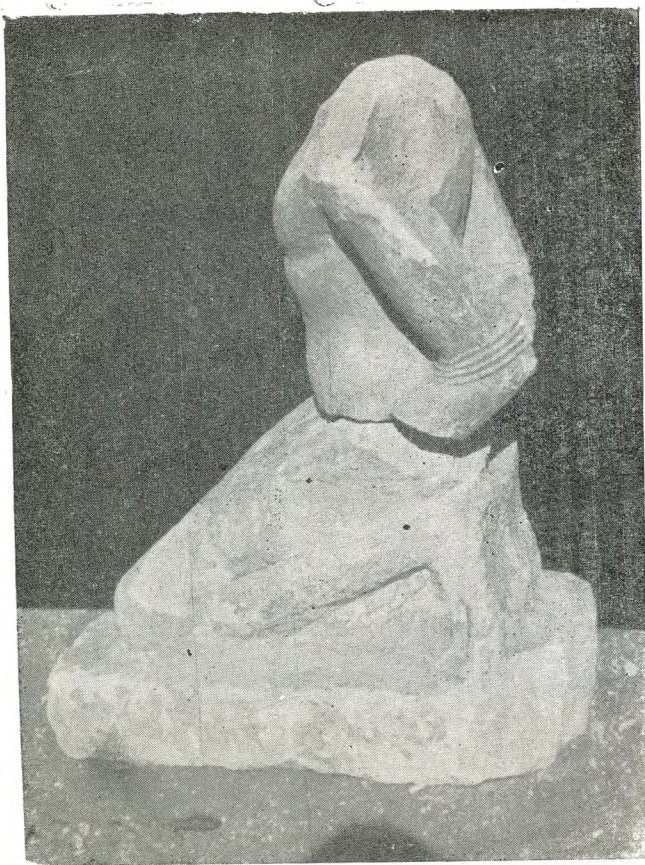
*A*



*B*

Deux aspects d'une statue de prisonnier acéphale (temple de Pépi Ier).





*A*  
Statue de prisonnier acéphale.



*B*  
Tête raccordée à un buste de  
prisonnier.





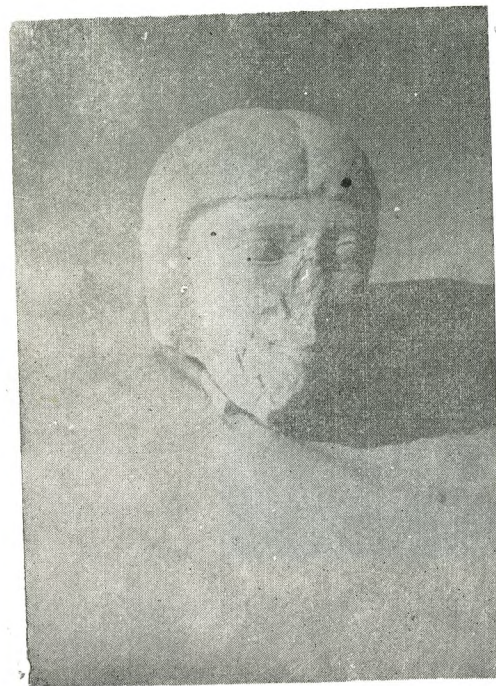
*A*



*B*

Tête de statue d'un prisonnier asiatique.





*A*



*B*



*C*

Différents aspects de la tête d'une statue de prisonnier peut-être libyen.





*A*



*B*

Tete de statue d'un prisonnier africain.





A



B

Deux aspects d'une tête de statue de prisonnier  
nouvellement découverte.



## SOME NAMES OF THE TEMPLE OF EDFU

BY

MOHIY E. A. IBRAHIM

Among the latest temples to be built in Egypt are those of the Ptolemaic Period, especially the Temples of Edfu and Denderah. The Ptolemaic temples differ from those of Pharaonic times by the state of their preservation, and by the nature and extent of the reliefs and the inscriptions that cover their walls<sup>(1)</sup>.

Among all the Ptolemaic temples, Edfu occupies a unique position. It is the only one that is completed. It is well preserved; the main temple is intact, its roof is complete, its columns are in position, and only the obelisks at the entrance, the masts and some small chapels on the roof have disappeared, while the sacred lake, the temple storehouses, abbatoirs, and the buildings of an administrative nature still lie deeply buried under the houses of the modern town to the east of the temple<sup>(2)</sup>.

The history of the temple could be summarized thus: "There were three phases in the building of the temple. The original nucleus, itself a complete temple with a hypostyle hall, two other halls, sanctuary and numerous side chapels, was commenced in 237 B.C. and dedicated in 142 B.C. To the south of this was added, between 140 and 124 B.C., the Pronaos or Outer Hypostyle. Finally, the foundations of the Forecourt, the stone enclosure wall and the pylons were laid in 116 B.C.; the dedication ceremony was celebrated in 71 B.C., but the decoration of the temple does not appear

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<sup>(1)</sup> H. W. Fairman, "Worship and Festivals in an Egyptian Temple" in the *Bulletin of the John Rylands Library*, vol. 37, n. 1, 1954, p. 165.

<sup>(2)</sup> H. W. Fairman, *Ibid.*, 166.







*M33t-Hr*



*gm. f M33t-Hr. f hws. tw r mnk* (E. IV, 14, 10)

"He found his *M33t-Hr* built perfectly".

As a temple, according to the texts it is called:



*st s3b sš n hm Hr-3hty wrš. f sdr. f m-hnt. s* (E. IV, 1, 13)

"The Place of Enjoyment of the Majesty of Horakhty in which he spends day and night".



*Bhdt wr nt 'py ntry* (E. IV, 1, 13)

"The Great Throne of the Winged Disk".



*srh n s3b-šwt* (E. IV, 1, 14)

"The Serekh of Him-with-the-dappled-plumage".



*bw nfr n b3 hpr hr h3t* (E. IV, 1, 14)

"The Beautiful Place of the Ba who came into existence beforehand".



*nst ntrw n ntrw p3wtw* (E. IV, 1, 14)

"The Throne of the Gods of the primeval gods".



*st ntrwy n R' hn' dfn. f T3-Tnn hyn nfr n psdt. sn* (E. IV, 1, 14-2, 1)

"The Place-of-the-Two-Gods of Re and his ancestor *T3-Tnn*; the Beautiful Place of their Ennead".



*hwt-ms-nht n Hr-hni-hr(t)* (E. IV, 2, 1)

"*Hwt-ms-nht* of Horus-who-traverses-the-sky".



*bw wr n wbnv* (E. IV, 2, 1)

"The Strong Place of the Shining One".



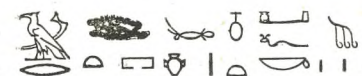
*hwt hh pr dt n drty wr phty* (E. IV, 2, 1-2)

"The House of Eternity, the House of Everlasting of the falcon (= Horus), great of power".



*pr h' n hnty itrtv* (E. IV, 2, 2)

"The Shining House of him who is at the head of the two *itrt* (i.e. the Upper and Lower Egyptian shrines)."



*m3rw mh-ib nt mfk inm* (E. IV, 2, 3)

"The Favourite Kiosk of him with the turquoise hue (= Horus)".







st R<sup>c</sup>

“The Place of Re.”

(E. IV, 7, 8)



ir shw

“Maker-of-Glory”.

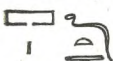
(E. IV, 8, 1)



htp nbwy

(E. IV, 8, 6)

“Peace of the Two Lords” (or “Pleasure of the Two Lords”).



pr dt

“The House of Eternity<sup>(1)</sup>”.

(E. IV, 9, 1)



hwt bik

“The Mansion of the Falcon<sup>(2)</sup>”.

(E. IV, 9, 5)



st šms-ib

“The Pleasant Place”.

(E. IV, 10, 7)



nst wrt nt nd it. f

(E. IV, 10, 7)

“The Great Throne of the Protector-of-his-father”.

(1) See above E. IV, 2, 1-2.

(2) Var. (E. IV, 10, 13).



hwt isbt pw nt Hr-s3-3st

(E. IV, 10, 7)

“It is the Mansion of the Throne of Horus, son of Isis”.



bkr nt bik n nbty

(E. IV, 10, 8)

“The Throne of the Falcon of the Golden Goddess”.

st ntrwy pw nt R<sup>c</sup> hn<sup>c</sup> Hr

(E. IV, 10, 8)

“It is the Place of the Two Gods (namely) Re and Horus”.



hwt bik nt bik ntry

(E. IV, 10, 8)

“The Mansion of the Falcon of the divine falcon”.



Wr-nht nt nb P Msn

(E. IV, 10, 8)

“The Wr-nht of the lord of Pe and Mesen”.



šwyt n iswty wr phty

(E. IV, 10, 9)

“The Shrine of the Mighty Harpooner”.

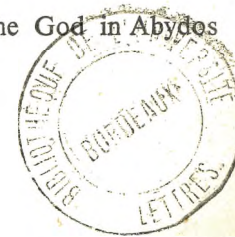






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